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THE AMERICAN FARMER:

A

MONTHLY MAGAZINE

OF

AGRICULTURE AND HORTICULTURE.

N. B. WORTHINGTON, EDITOR.

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☞FOR FALL CROPS.

CONTINUED SUCCESS OF OUR CELEBRATED

☞Animal Compost or Cereal Fertilizer.

KIMBERLY BROTHERS

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ENOCH PRATT FREE LIBRARY BALTIMORE

THE

AMERICAN FARMER,

DEVOTED TO

Agriculture, Horticulture and Rural Economy.

[ESTABLISHED 1819.]

"O FORTUNATOS NIMIUM SUA SI BONA NORINT
"AGRICOLAS." . . . . . *Virg.*

Fifth Series. BALTIMORE, NOVEMBER, 1861. Vol. III.—No. 5.

NOVEMBER.

"I saw old Autumn in the misty morn
Stand shadowless like silence, listening
To silence, for no lonely bird would sing
Into his hollow ear from woods forlorn,
Nor lowly hedge nor solitary thorn:—
Shaking his languid locks, all dewy bright
With tangled gossamer that fell by night,
Pearling his coronet of golden corn."

WORK ON THE FARM.

THE FARM YARD.

As winter approaches, our interest centres in the farm yard. Begin in time, that every thing may be made comfortable there before cold weather. Stock of every kind, as well as crops, it is the duty of the husbandman to secure against damage by weather. A cow, a horse, or a hog, is just as surely injured by undue exposure as corn or wheat or hay, and he who allows his cow to shiver in a cold rain, violates the principles of economy just as much as if he leaves his hay upon the ground exposed to the alternations of wet and dry weather. But the higher motives of humanity will prompt him to look to the comfort of his stock, and the profit of doing so will be his double reward.

SHELTER FOR CATTLE.

The cattle pens should be arranged with an eye to convenience in feeding, and to the comfort and health of the stock. All animals should have at least open sheds, protected on three sides from the winds, where at all times they may find a dry bed. Experience will perhaps show that horned cattle will be more healthy on the whole under such shelters than if tied up in close stables. All such as require to be fed separately must have their own stalls or pens, where they may be shut up as occasion may require. Cows when they approach the time of calving, the calves of the past season, and working oxen, should all have their separate apartments, where they may get their food undisturbed. The yard should be protected by gutters on the houses against an excess of water, and abundant litter, such as corn stalks, thrown in to absorb what falls directly into it. By no means should the stock be required to plunge through frozen mud and litter in passing from one part of the yard to another.

WATER.

Abundant water, accessible at all times, is very desirable, or at any rate so convenient as to afford every animal an opportunity to drink twice a day. A cistern to catch the rain water, or a pump, should be at hand, unless a spring be very near. It is barbarous to stint your cattle and then when very thirsty on their dry food, to compel them to drink large quantities of iced water. Provide against this now in due time.

MANURES.

The yard is the usual receptacle of all the manure made from this time to summer. Any accumulation now there, should be cleaned out and spread upon wheat or grass land. All the stalls and sheds of animals of every description should be kept clean, by taking off all droppings, dirty litter, &c. to the yard at stated seasons. Corn stalks make an excellent absorbent, and the tread of the cattle in the yards prepare them for use as manure. It is a very difficult matter to preserve the manure from the horse stables from what is termed *fire-fang*, or burning from violent fermen-

tation, a process which disengages ammonia, and injures the quality of the manure most seriously. Clear the stables out frequently and spread the contents over the surface of the yard.

HOG FEEDING.

To feed economically hogs for slaughtering, they should have dry and comfortable sleeping places, and ample supply of good food always at hand. As we have said frequently before, they will fatten more rapidly in pens with floors of board, which should be raised so far from the ground as to allow the manure to fall through entirely clear of them. It is better to have the floor tight and sloping a little to the side opposite the trough. This will admit of their being readily cleaned and washed out frequently.—Some absorbent at hand to mix with these washings will enable you to save a very large quantity of the most valuable manure. Many persons think it desirable to allow their fattening hogs liberty to root in the earth and in muck and litter accumulated in their pens. This is a mistaken policy as to economy. To make fat rapidly, they should eat and drink all they want and *keep quiet*. They should not be allowed to work. Supplies of charcoal and rotten wood will correct the natural craving to get to the earth. They need no litter when on a board floor and are better without it. These suggestions are made with reference to economy. If we looked to the quality of the meat rather than to very strict economy, we should fatten our hogs on a small grass lot, with running water in it if practicable.

There is without question great saving by a due preparation of the food of hogs. Both grinding and cooking pay well the cost, especially where the necessary attention to the cooking may be done without taking off a valuable field hand. Very generally, however, in the Middle and Southern States, Indian corn, the staple food, is and will be given whole to the hogs, to prepare as best they may. The press of fall work rarely permits us to think we can take the trouble to cook, when corn is plenty and answers the fattening purpose so very well without. We only ask our friends, then, not to throw the corn into mud holes.

BEEVES AND FATTENING SHEEP.

The fattening of beeves and sheep intended for slaughter should now be carried on as rapidly as may be without forcing.

THE CORN CROP.

The corn crop may now be gathered in. If there is room to store it under cover in the husk it may be husked at leisure, and the husks then make good winter provender for cattle. When the work can be accomplished before severe weather sets in, it may be better on account of economy of labour to husk immediately from the stalk in the field. Where large crops are made, this method is usually pursued. The corn fodder of every sort is valuable if preserved with care. The blades and tops make the best long food for horses and milch cows when they have been saved in time and kept from too much exposure to weather. If the stalks are to be passed through the yard for manure, they should be used as early in the season as practicable.

THE WHEAT FIELD.

It is to be hoped that wheat seeding is completed. If any remain to be done now, finish off without delay, weather permitting, and whatever you may have done for the earlier portion of your crop, let all the late sowing have a dressing of Peruvian Guano. Let your field have ample water-furrows to take off without delay the excess of water which is so often destructive of the young plants. It is water and frost, and not frost alone which "winter-kills" our wheat.

POTATOES, TURNIPS, &C.

Potatoes should be now secured. If you have no good cellar, they are very well preserved in kilns on top of the ground. Select if possible a high point where the soil is light and thoroughly drained. They should be dug and put away in dry weather. The dryer the soil where they are buried, the more secure they are. Be sure that the rain water is excluded, and before hard weather sets in let the covering of earth be increased to a foot in thickness, beside a covering of straw placed next to the potatoes. Turnips of all kinds may be preserved in the same way, but they are not materially damaged by a little freezing, and require much less covering.

THE TOBACCO CROP.

Keep the houses closed now except on very fine days. Close always at night, to guard against dampness and freezing. The work of stripping should take precedence of every thing else when a portion of the crop is sufficiently cured.

ICE HOUSES AND PONDS.

Let house and pond be got in order to enable you to save the important summer comfort of a store of ice on the first freeze. Spring and running water should be excluded from the pond after it is filled, if practicable.

In Scotland when the word corn is used it is universally understood to signify oats; in England it means wheat, and in the United States maize.—*Ex.*

WORK IN THE GARDEN.

There is little to be done now in the Garden beyond the preparation for winter. Take up and store away roots of different sorts, except Parsnip and Salsify, which are better left in the ground. Take up and store Cabbages, burying them in trenches up to the leaves and protecting with a covering of brush, corn stalks or straw, raised on forks driven in the ground, high enough to allow a circulation of air. Neither should they be exposed to the direct rays of the sun. Freezing does not hurt them materially but alternate freezing and thawing does.

GREENS.

Spinage and other greens, if not clear of weeds, should be cleaned out and thinned to a distance of four or five inches apart, and should be protected with brush laid on a frame-work of logs.

CABBAGE, CAULIFLOWER AND LETTUCE PLANTS.

If you have plants of these in frames, give them plenty of air in all moderate weather. If they are in borders, protect them with pine or cedar brush laid on a frame-work a foot in height.

ASPARAGUS BEDS.

Clean off dead tops and weeds from Asparagus beds, and beds of plants sown last spring. Give a dressing of salt sufficient to whiten the ground pretty well, and then cover with two inches of well-rotted manure.

CELERY.

Finish earthing up Celery and cover over with straw, before hard weather, sufficient to prevent freezing, throwing on dirt enough to keep the straw in place.

RHUBARB AND SEA KALE.

Seeds of these vegetate better if sown now than if postponed till spring.

POTATOES.

Potatoes for early use may be planted before the ground freezes and covered up sufficiently with straw or coarse litter to prevent freezing. Under ordinary circumstances they will be fit to use a week earlier than if planted in spring.

TRENCHING AND DIGGING.

This work should be done during the month, to give the newly dug soil the full benefit of the winter's exposure.

I have discovered a method of ridding calves of lice. *Give them flax seed.* I am wintering eight calves; they became very lousy, and I fed them half a pint at a time for two days, and the oil from it drove the lice all off.—*Genesee Farmer.*

FRUIT GARDEN AND ORCHARD.

PLANTING.

All the sorts of hardy fruit may now be advantageously planted, if the soil be dry. The ground should have been put in thorough order by ploughing and manuring. In this case very little manure is wanted about the trees when planted. Neither should deep holes be made, which in stiff lands become receptacles for water. Some of the thriftiest and finest trees we have ever seen were planted by setting the young trees on the very surface of the ground and throwing soil enough upon the roots to give them ample covering. If this be considered an extreme plan, we do not doubt it is a much safer one than that of burying the roots very deeply in holes. Apples, Pears, Quinces, Plums, Cherries, Walnuts, may be planted advantageously in the fall.—Peaches, Apricots, Nectarines, may be better deferred till early spring. Raspberries, Currants and Gooseberries may be planted. The two latter grow very readily from cuttings, which may be put down now. Every family should have a few fig trees planted on a Southern exposure against a wall. They frequently bear well in this latitude without protection, but a few might be sufficiently protected to ensure a crop.

PRUNING.

Apple, Pear, and other hardy fruit trees may be pruned this month if convenient.

STRAWBERRY BED.

If the old Strawberry bed has not yet been attended to, have it thoroughly cleaned of weeds, grass, &c., and well dressed with good manure.

GRAPE VINES.

These may be planted now, or may be got from the nursery and well protected in trenches till February.

STAKING.

All newly planted trees should have well driven stakes and be bound to them with wisps of straw.

FLOWER GARDEN, LAWN, GREEN HOUSE, &c.

As long as the ground is unfrozen, transplanting Shrubs and Vines of every kind may be carried on, also planting Edgings, making grass plats, &c. Grass plats should be thoroughly raked and dressed with fine manure. On a large lawn the harrow may be used and any manure sufficiently broken to spread well. Green house plants will all be housed by this time, and should have plenty of air in fine weather and be syringed occasionally. When the weather becomes cold

and damp a little fire will be necessary. Use water prudently now. If the green fly infest the plants, fumigate with tobacco.

CHRYSANTHEMUMS IN POTS,

Give plenty of water to, and take them in the house to flower.

ROSES.

Put all tender Roses in pots and remove to the house.

POLYANTHUS, AURICULAS AND DAISIES,

Repot and put in the house for spring flowering.

PERENNIALS.

These of all kinds may be removed and increased by separation of the roots.

GLADIOLUS; TIGER FLOWERS, TUBEROSES, &C.,

Take up and put away in a dry place till spring.

☞The distinguished chemist Boussingault has just read before the French Academy of Sciences, a paper on the employment of Lime in Agriculture. It has not yet been published, but M. Barral gives the following as the subtance of it, which we translate for the *Co. Gent.* from the *Journal d' Agriculture Pratique* for August 5 :—

"Lime introduced in an arable soil very quickly sets at liberty a certain quantity of azote in the state of ammonia; the azote elements were before united in insoluble combinations, not assimilable by plants—the action of the lime sets them free, and permits a part of the capital buried in the soil to be utilized for the next crop. If this was the whole effect of lime, of which the experiments of Boussingault afforded evidence, small doses of it at once, ought to be counselled, because the quantity of ammonia produced does not increase in proportion to the quantity of lime used. But as heavy limings produce incontestible effects in certain cases, it must consequently be admitted that lime exerts an action of some other kind upon the elements of the mould. Boussingault thinks that certain mineral matters, such as potash and silica, may be liberated in the soil by the lime; that other substances injurious to plants, are destroyed or modified by the same agent, and that to these effects is added moreover a physical action, changing the constitution of the land. The action of lime is thus excessively complex, and its good effects can only be explained by studying attentively the special circumstances under which they are produced. The grand fact proven by the present researches of this agricultural *savan*, is that there exist in mould, as well in the form of organic matters as in that of mineral matters, a host of substances completely inert for vegetation, until the moment when some proper agent renders them assimilable by plants. The continuance of experiments upon the method devised by Boussingault, can alone clear up these excessively complex facts, and point out to our agriculture the most effective processes. The discovery of methods which conduct to truth is often the greatest service that can be rendered to Science and to Art."—*Co. Gent.*

Bones as Manure.

We have published the following before, but having had inquiries from some of our friends on the subject, we commend it again to their attention.—EDITOR FARMER.

"Bones make one of the best fertilizers for the farmer and fruit-grower. One difficulty in using them is the want of mills in some places for grinding them.

The best method for reducing bones at home is that first introduced to the agricultural public by Prof. Pusey of England, and since recommended by Prof. Johnson of New Haven. The process, in brief, is to put the bones into a pile, filling the interstices with sand, ashes, loam, muck, or any fine material, and to saturate the pile with stale urine or dung heap liquor. About one-third of the weight of bones is composed of cartillage and animal matter, which heats in the heap and breaks down the whole structure of the bones, making it a fine mass. It is better that the bones should be crushed with a sledge hammer, as the finer they are made, the more completely they will be reduced by the fermenting process. In forming a heap, a layer of muck, or good loam a foot thick, should be put at the bottom. Then scatter on a layer of bones a few inches in thickness, and put on just enough of the ashes, sawdust or other fine matter to fill all the interstices. The object is to bring the bones as closely together as possible, and to make the pile compact. When this is done, wet the whole with urine or barn-yard liquor, and cover a foot thick with muck or loam, to absorb the ammonia that will escape from the fermenting mass. In warm weather the fermentation goes on rapidly, and the bones will be decomposed in from two to six weeks. Such fragments of bone upon the outside as are not reduced by the first operation, may be put up in a second heap. The bones in the centre of the heap will be most perfectly decomposed, and the larger the heap, the more complete the disintegration. The process of fermentation may be ascertained by thrusting a bar into the heap. If the ammonia escapes, which will be indicated by the smell, add more muck."

[For the American Farmer.]

Maple Molasses and "Black Birch and Maple Wine."

BY PATUXENT PLANTER.

Messrs. Editors: For preservation in your valuable columns of the *Farmer*, and in the hope that it may be tested and found useful, by some of your many readers in those sections of the country where the black birch and the sugar maple abound, I send you the following recipe published by J. Adlum in October, 1830. It will be remembered that Mr. A. was the first man who established a vineyard for making wine extensively in the United States, and was the enlightened vintner, who gave celebrity to the Catawba, Isabella and other native grapes. His statements are therefore worthy of belief, and his example and admonitions are eminently worthy of record and consideration. At this critical period, when home manfactures call for the exercise of all the energy and skill of our housewives and husbandmen, the two recipes are alike valuable as adding to the resources of *home* for both sustenance and luxury:

How to Prepare Maple Molasses and Birch Juice, so that they may be kept for an indefinite length of time.

At the latter part of the season when the juice or sap of the *sugar maple* tree will not granulate to make *sugar*, boil the sap to a consistency about the thickness of common or sugar house *molasses;* and it may be made very pure, if the person attending will be careful in first straining and then scumming it. When the quantity is reduced about one-fourth part, take, say a gallon, of the boiled sap, and a pint of new milk immediately from the cow, before any separation has taken place, (or skimmed milk may answer,) and mix it with this gallon of liquid, by stirring it well; then put it in the boiler, at the same time stirring it, and let it simmer for some time, and keep carefully scumming it, until it is clear and transparent; then boil it to the consistency of molasses; when it may be barrelled up, and kept as molasses is, to be used at pleasure, either to eat as a sauce with puddings or bread, or to be manfactured into *wine* or *beer;* and it may also be mixed with grape juice, when making wine, as our grapes are generally deficient in saccharine matter.

The *birch juice* is to be treated exactly in the same manner; but the operator must use much of his own discretion, as I do not know whether it will boil to the consistency of molasses or not, but I presume it will; and there can be no doubt but that, by boiling it away say to one-fourth part, that is, to evaporate three-fourth parts, it may be barrelled and kept in a cool place until wanted for use.

How to Make Wine of the above Preparations.

Put a quantity of milk-warm water in a tub of say ten, fifteen, twenty, or thirty gallons, according to the size of the cask you intend to fill; then take a quantity of the molasses, and pour it gently and gradually, at the same time stirring it, into the water, until a fresh laid egg will swim, so that the upper edge will be even with the surface of the liquid; it will then be of the specific gravity of 1.125, which is equal to three pounds of the sweet principle or sugar to the gallon; then take for every ten gallons of liquid, six ounces of cream of tartar, or crude tartar, which is better, or one pound to a barrel, and dissolve it in warm water or the warm liquid, and put it into the cask with the above mixture, to ferment it, and keep a portion of it to be filling up the cask as it wastes by the bung; and in ten or twelve days bung it up tight; and in three or four months, if the fermentation is complete, it will be perfectly fine and bright, when it ought to be racked off in a clean cask, at the same time fumigated with a sulphur match, and after the next August it will be a fine wine. Those making the wine will mix the birch juice according to their taste; some will use more and some less. If it adds to the specific gravity, which can be easily found by experiment, it may be but in the water with the molasses, and it will be a saving of it, that is, it will take less molasses.

A very wholesome beer may be made of these ingredients, with the addition of hops, which formerly, and I suppose now grow spontaneously in a great part of the country north of the forty-first degree of latitude, especially in the sugar maple countries.

When the molasses and birch juice are in this condensed state, it may be transported to any distance, either by land or water, and it will certainly command the highest price molasses sells at.

From Maine to our most western settlements, I have no doubt but that thousands of barrels of this concentrated sap or juice may be annually collected, if the inhabitants generally knew or were informed of the value of it. It requires some enterprising and respectable people, leading characters of each settlement, to induce others to follow their example. Exclusive of the advantage to be derived from it as a sauce with their puddings or bread, it will make from three to five times its quantity of wine, and ten times its quan-

tity of beer. Those families who use it in its state of molasses, and concentrated birch juice, as a sauce generally, will never be troubled with worms or indigestion.

Of the above ingredients, one of the most salubrious and pleasant tasted wines may be made, and it will not cost more than five to fifteen cents per gallon, according as the operator wishes it strong or weak.

It is unnecessary to give directions how to make small beer of the above, as there is scarcely a good housewife in the country but knows how to make it of persimmons, pumpkins, and other things—consequently the same process, with the addition of some hops, will make a wholesome and pleasant beverage.

Exclusive of the above mode of making molasses, considerable quantities of it may be drained from the sugar in the time of manufacturing it. I have seen maple sugar, made near Stockport, on the Delaware river, which had the molasses separated from it, equal in color and flavor to the very best St. Croix sugar, and others equal to our Louisiana sugar. In short, the first was equal to most of our lump sugars in fineness and flavor, and would answer all the purposes they are applied to.

There are also immense quantities of wild grapes growing almost over the whole face of our country, all of which may be converted into wholesome wine, either in their green or ripe state; and it will (according as the grapes may be ripe or otherwise) not cost more than from six to thirty cents per gallon; and when it is manufactured at home, the manufacturer knows what he has and is drinking, which is not the case at the present day, for when he drinks foreign wine he does not know what he is drinking, no matter for the name. I have at various times published in the newspapers the manner of making wine from our wild grapes, in their green and ripe state; and I will venture to say, that some of it will be equal to the *best* imported wines, and none so bad as the *vile stuff* sold at present under the names of port, claret, &c. JOHN ADLUM.

Mr. Adlum makes the following statement about the same time:

"Some twenty odd years since, I was travelling across the country from Wilkesbarre, in Luzerne county, Pennsylvania, to Muncy in Lycoming county, when I met an old gentleman, a respectable and intelligent Yankee farmer, who knew me by sight, and said he was glad to see me, and if I would ride back about a mile, he would give me a taste of such wine as he was sure I never before tasted. I accordingly went back with him, and he gave me a glass of wine of a *straw color*, of a *most delicious* flavor, and no doubt it was as salubrious as delicious. I asked him what it was made of, when he gave me the following account. At the latter part of the season for making maple sugar, and when it would not granulate, he boiled a quantity of the juice, so as to become pretty sweet, and he also boiled a quantity of the juice of the *black birch*, (*betula nigra*,) and he mixed them together, and then fermented it, and it produced the wine I then tasted.—The *sugar maple* and the *black birch* grow over a great part of our country, and there are millions of millions of trees of the former growing from *Maine* to I do not know how far west and south; and there are tens if not hundreds of thousands of trees of the latter, either growing among the former or in the vicinity of them. And in the season of making *maple sugar*, the *black birch* produces an equal if not a greater quantity of juice. I have seen trees of them that I think would produce from a barrel to a hogshead; they were from two to near four feet diameter—but where there is one of this size there may be a hundred less, say from nine to eighteen inches in diameter. The juice has a peculiar fine flavor, and is very wholesome; I have drank it for days and weeks in succession, when I was exploring the country where they grow, and I also had my chocolate made of it, and I think nothing can be more wholesome. A tea made of the buds or bark is excellent to disperse anything that may lay heavy on the stomach, and it will *cure indigestion, and also prevent it.*"

While my hand is in, let me append another paragraph from an old writer:

"*Domestic Wines*, when rendered so cheap that those who now drink spirituous liquors, under their different denominations, can obtain them at our shops on the same terms, will undoubtedly take place of the latter, and relieve us from the curse of intemperance which now rests upon our land. We know that there are people in our country who are striving to prevent the consumption of all kinds of liquors, and who brand the use of wine, beer, cider, &c., as equally improper as that of rum or brandy; but we think there is a wide difference in the evil which results to the community from the intemperate use of these articles, and that the friend of humanity should think his exertions peculiarly blessed, when the use of the latter shall be discontinued, and the *spiritual pestilence* shall cease its ravages in society. The introduction of cheap wines, the use of which *will not* sink our fellow-citizens to *brutes*, destroy them by thousands, would aid the

present cause of temperance more than anything else which can be done; as its use would satisfy the drinker, gratify his taste, and answer ends for which he would otherwise drink rum, brandy, gin, or whiskey."

My opinion coincides pretty much with the above. People now-a-days, men and women, friends and wives, fathers and daughters want to accomplish too much. In warring against *whiskey* they wish to drive out all beverages. Wine has been drank ever since the days of the Patriarchs—and in countries where the vine would not flourish, beer, cider or other things were substituted "to make the heart of man glad," so it would seem to be *folly* to try to make mankind relinquish a custom that has been followed by all the *civilized and most enlightened nations of the earth for upwards of four thousand years;* ever since Noah felt its soporific effects. If statistical history is reliable, the districts of those nations where the vine is grown extensively are remarkable for sobriety and temperance. In these war times—times of national trial and individual distrust, uncertainty and embarrassment, why can we not, one and all come down to *home-spun* and *home-beer*.

Wintering Hogs.

To the Editor of the American Farmer:

I think I have adopted an economical mode of wintering stock hogs, to which I wish to give publicity through your valuable journal. Having been scarce of corn last winter, I fully realized that necessity is the mother of invention, and I adopted the following plan for wintering my hogs: I had their food to consist of about three-fourths of beardless wheat chaff and one-fourth of good wheat offal, such as rich wheat bran; had the chaff well saturated with water before applying the offal, so as to cause it to adhere well to the chaff. The above furnishes a cheap bulky food. Hogs whose stomachs are kept well filled have an active, vigorous circulation of the blood, which keeps them warm during the inclement winter season, provided they have access to a good warm sty to protect them from wet.

PHILANTHROPY.

Liberty District, Fred. Co., Md., Oct. 2, 1861.

☞ A correspondent of the *Scottish Farmer* says that Potatoes buried at the depth of three to five feet below the surface of the ground will not sprout, but keep fresh for an indefinite time.

Leaves as Manure.

Leaf manure has long been held in high estimation by gardeners and floriculturists, as affording one of the best substances known as a food for plants. Many, however, regard it as a purely vegetable substance, whereas it is rich in mineral matters which have a direct and powerful tendency to improve the constitutional texture and character of any soil to which they may be applied. The alimentary substances which contribute to the sustenance and growth of vegetables are, for the most part taken up in a state of solution by the roots. In this condition all of the mineral ingredients discovered in plants are introduced into the system, such, for instance, as silex, lime, potassa, magnesia, alumina, &c. The sap, which is the medium of this transmission and assimilation, passes into the leaf, where the watery particles are thrown out by evaporation through the minute spiracles on the upper surface of the leaf, and the mineral matters retained and distributed through the plant, and in part through the vascular structure of the leaf itself.

To illustrate more fully the truth of the position assumed, we present the following analysis of the leaves of the pear tree, plucked in May, immediately after the falling of the blossoms:

Carbonic acid	11.560
Silicic acid	1.750
Phosphates	25,050
Lime	4,715
Magnesia	4,500
Potash	18,950
Soda	15,190
Sulphuric acid, chloride, and organic acids not determined	
	81.715

By comparing the results of analysis of the same tree made in the spring and fall, it will be found that the older the leaf is the greater will be the amount of mineral matters contained in it. It will also be found that the foliage of trees contains more mineral matter than the solid wood of the trunk.

In the matured foliage of the elm, (*Ulmus Americana,*) upwards of 11 per cent. of earthy matter—ashes—may be found, while the solid wood contains less than 2 per cent.; the leaves of the willow more than 8 per cent., while the wood has only 0.44; those of the beech, 6.67, the wood only 0.35; those of the European oak, 4.06, the wood only 0.22; those of the pitch pine, 3.13, the wood only 0.27 per cent.

These facts demonstrate, conclusively, that the application of leaves as a manure must be succeeded by advantageous results. Every leaf applied in this way restores to the soil something o which it has, in the process of vegetation, been

deprived. In this way the mineral ingredients of the soil are forced through a certain routine, and a constant circulation or reciprocity of action, is kept up between the soil and the vegetable beings it supports and perfects.

Entering the sap in solution through the mouths or spongioles of the terminal rootlets, they circulate through the system, and are ultimately deposited in the substance of the leaf, which, in due course of time, falls to the earth, and by its decay restores them once more to the soil, and in a condition the most favorable for again travelling the circuit in which they are destined endlessly to revolve.

The soils of our forests, it is well known, never run out, or are so far depreciated as not to be able to supply abundant aliment to the gigantic vegetation they are found to support. The reason of this is obvious. They annually receive back the greatest portion of the mineral constituents of the trees, together with no inconsiderable quantity of organized matter, derived from the atmosphere.

Were the leaves to be removed every autumn from the forest lands, the same as grain, grass, and root crops are removed from arable soils, the impoverishment consequent upon such a course would be no less obvious in the one case than in the other; they would "run out"—the vegetation would be weak and sickly; and to support it, we should be under the necessity of applying, annually, large and increasing quantities of manure.

Leaves unquestionably afford a rich material for manure, and no farmer who has a wood-lot in the vicinity of his farm should neglet to accumulate large quantities, to be used as litter for his animals during winter, or as a coating for his yards and other enclosures where animals are confined, and where the leaves will be in a situation readily to absorb the liquid voidings, and thus be reduced more speedily to the condition of aliment for growing crops. No compost heap should be formed without them where they can be obtained, and compost be made exclusively of them and other decomposable vegetable matters, will be found not only an economical, but efficient aid of fertility on any and every soil.—*New-England Farmer.*

Yield of Milk from Ayrshire Cows.

A prize of ten pounds ($50) was offered by the Duke of Athole for the cow which should give the largest quantity of milk in five days. Eight cows were sent for trial to the appointed place, near Ayr, Scotland. No restrictions were made in regard to food, except that the cows were not allowed to have milk given them.

The best cow gave 263 lbs of milk in five days, or 21 quarts per day. The greatest quantity given in a single milking was from this cow—28½ lbs., or 11½ quarts.

The average yield of the four best cows was about 48 lbs., or 19 quarts per day.

The trial took place last April, before the cows were turned out to grass. The *Ayr Advertiser* says that "the cow which gave the largest quantity of milk at the Duke of Athole's competition improved wonderfully in the amount of produce after she was put on the grass. She lately gave the astonishing quantity of 75 imperial lbs., or 7½ imperial gallons, of milk per day, for several days in succession. The largest quantity at one milking was 39 lbs," (15½ quarts.)

The milk of the prize cow yielded 12 per cent. of cream; that of the next best, 9 per cent.; the next 11, and the next 15 per cent. The latter is about equal in richness to Alderney milk.—*Gen. Farmer.*

The Rotation of Crops.

In Eastern Pennsylvania, for the past forty years, the system of farming pursued has been quite a regular one, and the rotation of crops which has been practiced during that period of time is as follows, viz: 1, Indian corn or maize; 2, oats; 3, wheat; with which last crop the land is laid down with grass, mostly timothy and clover. After the wheat crop has been removed, the grass and clover grow with vigor, and produce, in the course of a year or two, fine hay crops.—The clover, the year after the removal of the wheat, appears to have full possession, but the second summer it and the timothy are in about equal proportions; the third year the clover has nearly disappeared, and the timothy seems to be in full possession; three, four, and five, or even more crops of good timothy hay may be taken after the disappearance of the clover, though, in this Brandywine region, green grass and white clover, after three or four years, will have a large share of possession.

Green grass having become completely naturalized to this soil and climate, will eventually, in a well-prepared field, get possession without the application of any seed and to the entire exclusion of the timothy and red clover, the seed of which had been sown. In our best Brandywine lands, green grass and white clover will retain possession for forty or fifty years, or even longer than that. Those farmers who are thrifty and who have an abundant supply of barn-yard

manure, give old sod fields a dressing of manure in the fall of the year or early in the winter; but the most economical way of fertilizing an old sod field is to keep the stock off during the latter part of the season, so that there may be left a good coating of old grass, to rot on the surface, and at the same time to protect the roots from the injurious effects of a dry autumn and a winter of irregular temperature.

When, however, the grass runs out, from the abstraction from the soil of those properties necessary to produce this kind of herbage, this old sod is plowed and prepared for the Indian corn crop, and here the rotation commences. It has long been known, that the soil will soon become exhausted by a continuous cultivation upon it of the same crop, when the whole product is removed, and it has also been known that one crop seems in some way to render the soil better fitted for the growth and proper maturity of some other crop. This was first shown by experience and afterward established by science; hence the rotation of crops. The theory is that one crop abstracts from the soil some principle or constituent different from that taken by another crop, and some have advocated the idea that plants during their growth deposit matter in the soil which is excrementitious to them, but is food for other plants, and hence, when a particular plant has been for many succeeding years cultivated and removed from the same piece of land, that the soil becomes exhausted of constituents necessary for the maturity of that plant and unfitted for its further cultivation, but that a different plant requiring different food will grow there with luxuriance.

How the rotation now practiced in this part of Pennsylvania came to be established, or from whence it came, cannot be well ascertained. It may be of German origin, for though general in our old English and Welsh settlements, it cannot be traced to England, for the Indian corn crop is not there grown, and in the early settlements of this county, Indian corn was not cultivated on farms as a main crop; in truth, it may be said that in the early days of the colonies, there was no regular system, no rotation was regularly practiced; wheat then was the main crop, and grass seeds were not sown, (see first number of the *Economist*, p. 9.) It is probable that this rotation of corn, oats and wheat, was adopted because those particular grains were in demand in the Philadelphia markets, and because it was well suited to both dairy and grazing farming. These crops were grown because they found a ready market, and in this way the rotation probably became established in this vicinity, and it has well stood the test of experience, though not perhaps in accordance with chemical theory, as will appear from the subjoined tables, taken from a report by Prof. Way, of the Royal Agricultural Society of England, which shows the amount of silica, phosphoric acid, sulphuric acid, lime and potash removed from the soil by an acre of Indian corn, of oats and of wheat, each. The crop of Indian corn is estimated at 50 bushels to the acre; oats, 48 bushels of 42 lbs.; wheat, 28 bushels of 60 lbs.:

Analysis of Whole Plant, both Grain and Straw.

	Maize.	Oats.	Wheat.
	Lbs.	*Lbs.*	*Lbs.*
Silica	36.4	96.8	.....
Phosphoric acid	31.4	22.3	20.0
Sulphuric acid	6.5	5.8	.....
Lime	13.5	12.0	.....
Potash	56.0	36.5	23.0

Analysis of Grain Alone.

	Maize.	Oats.	Wheat.
	Lbs.	*Lbs.*	*Lbs.*
Silica	0.6	27.2	.....
Phosphoric acid	21.2	15.2	13.0
Sulphuric acid	.....	1.1	.....
Lime	0.2	2.2	.....
Potash	11.2	9.2	9.0

It will here be seen that a farmer who pursues this rotation of crops which is common here, removes with the *grain* in an ordinary rotation of corn, oats, and wheat, nearly 50 lbs. of phosphoric acid, and that if the *straw and fodder as well as the grain* should be removed, nearly 74 lbs. of phosphoric acid and 116 lbs. of potash are removed from an acre producing crops of the above named amounts. Professor Way has also shown by analysis, that a crop of meadow hay of 1 ton 15½ cwt., taken from an acre, will carry off lbs. 32.4 of phosphoric acid; lbs. 12.4 of sulphuric acid; lbs. 32 of lime, and lbs. 174 of potash, besides silica, magnesia, soda, etc.

How is it, in pursuing this rotation of crops, which removes so large a quantity of these valuable constituents from the soil, that our farms sustain their fertile condition? There are numerous farms in this county from which all of the *grain* of the oats and wheat crops have been sold for many years, besides much hay and dairy produce, without having received any manure or fertilizer *from outside*, except lime and plaster of Paris, and these farms are considered to be improving in condition and fertility. How is the supply of phosphoric acid and potash replaced in

farms thus treated? We know that there are many fields of grass which have been cropped year after year and pastured for twenty or thirty years without having received any manure, after the seeding of the wheat crop, with the exception of lime and plaster of Paris, and yet these old sod fields when broken up and planted with corn (without manure) will produce the very largest crops of corn.

The above tables show that an Indian corn crop of 50 bushels will remove from an acre, lbs. 31.4 of phosphoric acid and lbs. 56.6 of potash. Now the question is, whence has the soil derived these important constituents which it has been yielding to the crops of grass removed during the years of their growth? It is clear that in our Brandywine green grass soils there must exist inexhaustible supplies of these necessary constituents. The rain dissolves the carbonic acid which exists in the soil as the result of decaying vegetable matter; as this carbonated water decomposes and dissolves the phosphates and the potash which are known to constitute a part of the gneiss rocks of these primary formations, undecomposed particles of these rocks are disseminated through the soil, and these being disintegrated and decomposed by the weather, and the phosphate and other constituents being dissolved by this rain water, are deposited by it and retained in the soil for the nourishment of the growing plants. Our Brandywine soil thus possess within themselves the natural elements of fertility, and it is for agriculture to develop them for use.

Many farmers in this vicinity, while pursuing the rotation of crops, feed all the produce of their farms (except the wheat) to their own stock, and in this way, and by managing their manure heaps properly, they return to the soil with this manure nearly all these elements of fertility, together with the addition of such nitrogenous matters as are dropped from the cattle. By this management these farms improve yearly in productiveness.—*Evans' Rural Economist.*

Discipline vs. Strength.

Under this head, the Maine Farmer brings up a subject which is deserving of the attention of all farmers where oxen are used for labor,—especially "about these days," when cattle-shows prevail. We have in several instances noticed the undue value which has been given to mere strength in working oxen. We have attended shows where the pair that could move the largest load on a drag or stone-boat, were awarded the first premium. This is just about as unreasonable as to award a premium to a horse merely because he had trotted a mile in less time than any other in the class. In either case a single quality only, and that not generally the most important, is considered. Our contemporary observes:—

"We have seen oxen, well matched for size, color and disposition, oxen that were trained to draw upon a stone-drag, and to do it in the best manner; and yet, for the every day work of the farm in the various operations of ploughing, carting, &c., they were as unfitted as a pair of two-year old steers, so far as perfect discipline and handiness are concerned. They had been trained to pull, but knew nothing about anything else. If upon a cart it would take half an acre of land for them to turn round on, and if engaged in loading manure, the cart could not be backed to the heap, especially if the chance for doing it was somewhat narrow, without lifting at the wheel, or bothering and fretting the cattle."

Just so. It may be of great importance to have a yoke of oxen that can "twitch" the biggest log in the "lumber-swamp," and for this great size may be an object, but for the general purposes of the farm, we have often seen medium-sized cattle that were far more useful. Some of our Connecticut friends, whose handsome oxen will move a load backwards with as much facility and exactness as any could move it forwards, governed only "by the word of mouth," and which at the same time could tire good horses at a fair test with the plough,—understand this matter.—*Boston Cultivator.*

ABORTION IN COWS.—*Ergot.*—We are inclined to think that ergot has more to do with this complaint than is generally imagined. The most common form of ergot is that of rye—popularly called "spurred" rye. It is of a black or purple color, the grains from half an inch to nearly an inch in length. In some countries these spurs are collected for medical use, being prepared as a drug and administered in cases of difficult parturition. Where rye in which it abounds is used for bread, it is the opinion of some medical writers that it produces a disease described as dry gangrene, by which the population of certain districts has been fearfully lessened. But ergot frequently occurs in grass, and we have no reason to doubt that the substance is as powerful as that produced in rye. We have noticed it most frequently in blue-grass, (*Poa pratense,*) and couch grass, (*Triticum repens,*) but have seen it in timothy or herds-grass, (*Phleum pratense,*) and in red-top, (*Agrostis.*) It would be well for farmers to carefully examine their hay, or rather the grass before it is cut, and if ergot can be discovered, no hay which is known to contain it should be fed to cows that are with calf.—*Ex.*

Meteorological Observations *kept at Schellman Hills, Carroll Co., Md., Sykesville P. O.,* SEPTEMBER, 1861. (*Reported for the American Farmer.*)

DAY	THERMOMETER.				WIND.			RAIN	REMARKS.
	7 A. M.	2 P. M.	9 P. M.	D'y Mean.	7 A. M.	2 P. M.	9 P. M.	Inch's	
1	59	73	62	64⅝	N.W.	S.	S.W.	..	Clear.
2	60	75	70	68½	S.W.	S.	S.E.	..	Clear.
3	67	82	78	75⅝	W.	W.	W.	..	Clear.
4	70	78	68	72	W.	N.W.	N.E.N.	..	Clear.
5	60	61	64	61⅝	N.E.	N.E.	N.E.	1	Rain; began 6 A.M.; ended 6 P. M.
6	66	75	67	69½	N.E.	S.	N.W.	..	Clear.
7	65	77	68	71⅝	N.	N.	N.E.	..	Fog; clear.
8	65	70	66	66⅝	N.E.	E.	S.E.	..	Clear.
9	65	74	65	68	S.E.	W.	W.	..	Cloudy; rain began 5¼ P. M.; ended 6¼
10	61	73	68	67½	N.E.	S	S.	¼	Fog; clear. [P. M.; 9 P. M. clear.
11	70	75	74	73	S.	S.W.	W.	¼	Showery all day.
12	65	73	65	67⅝	W.	N.W.	N.W.	..	Clear.
13	63	74	63	66⅝	W.	W.	W.	..	Clear.
14	58	75	70	67⅝	W.	W.	S.	..	Clear.
15	67	83	75	75	S.W.	N.	N.W.	..	Clear.
16	70	75	68	71½	N.W.	N.E.	N.E.N.	..	Cloudy; 9 P. M. clear.
17	67	76	66	69⅝	S.E.	S.W.	W.	..	Fog; showery from 12 M. to 2 P. M.; gust
18	61	70	66	65½	N.	N.	N.E.	..	Cloudy; clear. [3¼ P. M.
19	63	76	65	68	N.E.	S.	S.	..	Cloudy; clear.
20	63	74	71	69½	S.W.	W.	S.	..	Clear.
21	68	75	67	70	S.	S.	N.W.	..	Clear; cloudy; showery P. M.
22	56	62	56	58	N.W.	N.W.	N.W.	..	Cloudy; clear.
23	54	70	59	61	W.	W.	W.	..	Clear.
24	54	72	60	62	N.	N.	N.	..	Clear.
25	51	75	65	63⅝	N.W.	S.	S.	..	Clear.
26	54	73	65	64	S.E.	S.	S.E.	..	Clear.
27	61	69	63	64½	S.E.	E.	S.W.	¼	Cloudy; rain; heavy storm of Wind from
28	56	64	53	57⅝	W.	N.W.	N.W.	..	Clear. [3 to 6 P. M.
29	47	63	53	54⅝	W.	N.W.	W.	..	Clear.
30	46	67	57	56⅝	W.	S.	S.	..	Clear.
..	..	..	..	....	....	....	....	..	

Monthly Mean, 66½. 2 inches Water fell.

HARRIET M. BAER.

The White Grub.—A New Pest.

A Naperville, Ill., correspondent of the Chicago *Post* describes a new enemy to vegetation. He says:

"I speak of what is here known as the white grub. It is the first time I have seen it, and am without the authorities here necessary to enable me to identify and name it. Its work is astonishing to me! I have never seen anything like it. During my ride hither on the stage-coach from Danby station, on the Galena and Chicago Union railroad this morning, I saw large fields of pasture and meadow without a green blade on it—the herbage as dry and dead as if it had been cut with the mower and cured by the sun for months.

"On examination it is found that the grass is cut off by these grubs just below the surface, and it cleaves from the ground precisely as fur cleaves from a moth eaten skin. The worm eats the roots all up, entirely destroying the sod, and so far as I can judge, the land must be reseeded before any grass will grow upon it. Fifteen minutes ago, in company with the Hon. Lewis Ellsworth, I visited one of these fields, and without the slightest effort the sod was rolled up, exposing these grubs at work in the earth.

"We could not find a root fibre where we found them. The ground seemed completely mired. They do not eat the roots of red clover, but they destroy the timothy, red top and blue grass sward, when the ground is dry, completely. They do not appear to work at all where it is wet. They eat the roots of young apple and pear trees, and even those of the European larch. Corn fields were pointed out to me where large patches of the corn were withering, said to be caused by these grubs.

"They are about an inch and a quarter to an inch and a half long, have a yellow head with six legs immediately behind it, while the rear of the body is unsupported, but is drawn or dragged along by the six forward propellers. The color immediately back of the head, is white terminating in a dirty gray or black, or earth color at the nether extremity. They are about (when fully grown) a half or three quarters of an inch in diameter.

Kindness is a language which the dumb can speak and the deaf can understand.

The Farmer on the Farm.

The farmer in his daily avocations has as much to think of, and to call forth the full exercise of every mental faculty, as is to be found necessary in almost any other business, and far more than in the majority of the common trades and professions of life. * * * *

Take him in the general arrangement of his business as a planner, designer or contriver. In this department he has to exercise much forethought and discretion. The arrangement of his business must be well contrived, and clear and distinct throughout, comprising in one view the past, the present, and the future. The management of the past month will require his present careful attention, and it will require it through the future. This he must provide for, and he must plan and lay out his work accordingly, or his business operations will soon be all crowded and in confusion. None of his crops nor any of his grass-fed animals are independent of his aid; all must be diligently cared for and looked after. The crop when planted will require subsequent culture. The stock when in the field or fold-yard will require constant attention, change of feeding in the pasture, and of keeping in the fold-yard. These, and matters like these, require his unceasing and intelligent attention, or his business, like the business of other people who do not bring a sufficient store of knowledge, tact, and judgment to guide it, will soon be altogether in irretrievable confusion, bringing ruin and discredit upon himself, and sorrow and distress to his family and friends. * * * * *

Take him as a breeder of stock. It may appear to the unitiated a very simple course to breed animals for the supply of the farm on which they are to be reared for sale or fatted for the market; but put him to the task, and he will soon discover his error. *The breeding of cattle, for instance:* animals bred from a good stock are of a quick, expansive growth, will thrive and fatten rapidly, and are very early brought to maturity; while to breed from a herd of common ordinary unimproved stock, they will grow slowly, they will never fatten, but remain on hand for months or even years before arriving at full maturity. Farmers in general know the difference of these kinds, and avoid the worst sorts as they would a pest. Great and universal attention is now given to these points of profitable breeding, and the existence of badly-bred animals is now the exception, while but a few years back it was altogether the rule. It is perfectly astonishing what a high state of improvement has been attained by the breeders of short-horned cattle. We see immense animals of this breed at two years old; and the Herefords are not far behind them, while perhaps in the quality of their flesh they exceed them. The rapidity of the growth of short-horns and some other cattle, their aptitude to fatten at an early age, and the quantity of meat they yield at this early age, are sufficient to place their breeders in a high position as public benefactors and great contributors toward promoting a nation's wealth. And this department of cattle breeding is carried out with consummate skill and judgment in very many ways. It has become quite a science. No novice would be able to estimate the product of certain animals being put together for breeding purposes. A breeder of standing, however, would tell you at once what would be the result. Hence the judgment in selecting sires to dams, strain of blood to strain of blood, etc. Then, again, the breeding of cattle for particular localities is attained with vast advantage. The small and beautiful Devon for the hill or mountain pastures, the Welch and Scotch for cold climates and mountainous heights, or the larger breeds for the fattening pastures, and the smaller breeds for the inferior pastures—all is the result of a wise and a thoughtful class of men, who have to make the best produce from their holdings, in whatever district they are placed. * * * * *

To graze cattle properly of each kind and age requires a very considerable knowledge of their habits and diseases, and the means of prevention and recovery. "The eye of the master grazeth the ox." Verily, no novice need expect to prosper as a breeder or grazier of cattle. I again confidently repeat that the farmer has as great a scope for knowledge, tact, and judgment in the management of *his business* as any other class of the community, in whatever busines they may be engaged in.—*Farmer's Magazine.*

The Check Rein.

When Stewpyd harnesses his horse for dragging brick up a grade, the horse's head is pulled back toward the tail and anchored there by the senseless and merciless check rein. The arrangement is unnatural; the animal is constrained by it. He must inevitably lose strength by it, for it disturbs the vital force, and induces an unnatural action in the muscles of the head, neck, shoulders and mouth. There is actually less energy and vigor left for the limbs and chest than there would be if the useless contrivance was jerked off and thrown over the nearest fence. If reason cannot teach this promptly to any man, just let him try the experiment by putting the martingale

upon himself and go to wrestling, or putting a check in the jaws of a boxer that shall extend down his back to his belt.

Who beside the British use the check rein, saving their general imitators, the Americans? The French do not use it, the Germans do not, the Indians and Spaniards of South America, who literally live on horseback, and are perfect horsemen, do not, the Spaniards of Europe do not, nor do the Turks. The most observant and most natural people in the world are free from this mischievous error. It is strange to us that the English and ourselves did not, years and years ago, reason upon the constantly witnessed fact, that when a check rein was loosed at a tavern stoop or in a stable, the poor horse always stretched out his neck and hung down his head. That was his language for saying that the strap hurt and wearied him, and that he was heartily glad to be relieved from it.

The genius that first proposed the mechanical feat of lifting himself up by the breeches, must have been the author of the theory that the check rein held the horse up and kept him from falling. The mechanical action in the two cases must be precisely the same. If the reader will reflect for a moment, he will see that no suspending power can be derived except from without the animal. A post, tree or beam is just as indispensable to the support of a horse as to the support of a man intent on suicide. A horse cannot hang himself up in the air by the terrets on his back, any more than a man can by pulling upwards at his neck-handkerchief.

The check rein should be abolished. It wastes motive power. Its use is unhealthy, for it disturbs the otherwise naturally and equally distributed vital forces. It shortens the life of the horse. It diminishes his speed, and lessens the free and quick action so essential to the animal's safety and that of his driver.

Brethren of the press, let us emancipate the horse from the British check rein.—*Buffalo Dem.*

Box-feeding of Cattle in England.

In England, where the business of feeding steers is well managed, both as regards profit and increase of flesh, experience has shown that, looking to both these ends, the best way to feed stock in the *winter* is to stable them in boxes, say ten feet square; the animal to be well littered daily, and the dung not to be removed till the end of the season if possible. It is alleged by the best authority that, under the weight of the animal, the manure becomes so well tramped that fermentation does not take place in any mischievous degree, and, at a low temperature, such as we have during the winter, not at all; hence there is no loss or damage to the manure, and the expense is saved of daily cleaning out the stables.

It has been found that from 15 to 20 pounds of straw daily is sufficient to keep the animal clean and to absorb the liquid parts of the manure.—When tramped hard, it has been ascertained by experiment that during cold weather the fermentation of cattle box manure goes on so slowly in the box, that but very minute quantities of ammonia are ready formed in it; those, however, who believe that manure should be fermented or rotted before being applied to land requiring in the spring, would find it advantageous to cart it out to the field weekly and there construct a heap in such a way as to favor its fermentation, and prevent loss.—*Jour. Royal Ag. Soc.*

Muscle vs. Fat.

The value of muscle and fat as regards contributing to the healthy action of the animal economy, is of such a nature as not to admit of argument. They are both necessary. While admitting that, we are forced to look with surprise at the (to us) inconsistent views taken in relation to the estimated value of their constituents. I mean *the value of nitrogen in the formation of animal organism.* Here also is the *primary* importance of nitrogen carries over as a second edition —the first being its value as plan food.

We must concede value paramonnt to that component of the animal organism which exercises the greatest influence over its working. This may arise from a delicate situation held by that component, or from its performing *more than one* function.

Muscle is composed of carbon, oxygen, hydrogen and *nitrogen*, and these are all necessary to form muscle. Carbon holds, by far, the largest share, and being likewise of as much value as *nitrogen*, as regards giving a helping hand towards muscle, and as it holds full sway over the rest of the constituents in relation to *quantity*, we give it the pre-eminence.

This is its *first* value, and the second is its *heat forming* property. All animals have an internal furnace, (lungs,) and also fuel (carbon.) Heat is generated by the uniting of the oxygen of the air in the furnace (lungs) with the fuel (carbon.) We now see that carbon performs *two* functions, while nitrogen but *one*. Carbon performs the *same* office as nitrogen, also one other. I ask all of your readers which is the *most valuable?*—*Cor. Country Gentleman.*

Autumn Application of Manure.

There is nothing connected with manure of more importance than its right application. Yet the whole theory is a very simple one. If diffused finely through the soil, it is useful; if not so diffused it is, of course, precisely the same as if absent. The best way, consequently, to apply a given quantity of fertilizing material is in the state of solution—that is, as liquid manure, so that it will come in contact with every particle of soil. The worst way is to throw it in coarse lumps or masses over the ground, and, by bad ploughing, half cover some of the coarse lumps, and leave others uncovered. If the season happens to be very wet, a small portion of the soluble parts may find its way into the soil, and ultimately be useful to the plants; if the season is dry, the uncovered parts may be of a little possible benefit as a mulch, and the covered parts prove positively injurious by rendering the soil drier, without giving it any rich particles.

But in ordinary practice manure cannot be converted to liquid, and then applied in water carts. The same result may, however, be attained in effect by a different and far easier management. Let the rains dissolve the soluble manure on the spot where it is wanted, and carry it directly among the particles of soil. This cannot be done in summer, when it will be dried up rather than dissolved. It is only to be accomplished by autumn and spring rains, or during winter thaws. That is, *spread manure in autumn whenever practicable.* The best farmers attach great importance to this practice. The finest fields of corn that we have seen this year, were in nearly every instance raised on sod that had been manured the previous autumn on the sod; and after a few inches of the top soil was well soaked with the liquid manure thus furnished, (assisted in its downward progress by the roots of the grass,) and just before planting time, this grass was inverted to a moderate depth, and the corn planted upon it. The same advantages have resulted from autumn manuring for any other spring crop requiring a fertile soil, or in the preparation of land for the spring planting of fruit trees; or in enriching the ground around young trees already planted.

But the question occurs to many, "how shall we get manure in autumn? our animals manufacture it for us only during winter." In answer, it may be observed, that some manure is made during autumn, more parttcularly from horses; should all be spread before or on the commencement of winter; another portion, and a very large one, consists of the droppings of cattle all through winter, mixed with cornstalks, straw, &c., and too coarse for application. This should be thrown into heaps to decay through summer, and if some soil, turf or muck, previously carted into the yard, should be mixed with the heaps, all the better for the preservation of all parts. If these heaps are sufficiently decayed by early autumn, they may be applied to wheat fields, after the land is plowed, and before harrowing, as we have elsewhere described; but if too coarse still, for this purpose, then they may be spread on land intended for spring crops.

Nearly all the benefits of autumn manuring may be secured, where cattle and other animals are kept in stables or warm basements, by drawing out the manure during the comparatively leisure time of winter, and spreading it at once on the land. The winter rains, whenever they occur, and all the spring rains, will give it a thorough washing, and carry the liquid into the soil; but such places must be selected for this purpose as will not favor the accumulation of water into brooks or streams, and thus carry off the manure altogether. Grass lands are much the best for this treatment, by tending to retain the manure.

Nothing is better for gardens that are to be enriched for spring crops, than autumn or winter application of manure; and newly planted trees, dwarf pears, strawberry beds, &c., receive a great deal of protection against cold by such coatings, which are to be turned in in spring.—*Country Gentleman.*

Tobacco for Scabby or Ticky Sheep.

The *Homestead* says: A good dip and scrubbing in pretty strong tobacco water will cure the scab and kill the ticks, and do the sheep good besides—see former volumes of *The Homestead.* Recently there has been a discussion in the *Michigan Farmer* on the subject of dipping lambs; we give some extracts:

"I have made it a practice for years whenever my sheep were ticky, to dip the lambs in tobacco juice. I take about four pounds of what the merchants term poor tobacco. Place in a cauldron kettle; boil until you have the strength, then reduce it nearly one-half with water, and this will be a sufficient quantity for one hundred lambs. This will kill the ticks sure, and leave the animal healthy and vigorous; at least such has been the case with my flock. My mode is this: After shearing let all my sheep go in one flock for four or five weeks; the ticks will all leave the old sheep and go on to the lambs. Then prepare as above and dip your lambs. By

so doing you will clear your flock of an enemy which has been very destructive in many fine flocks of sheep."—M. L. RAY, *Concord, Mich.*

"My experience has been considerable, having had the care of sheep for about forty years. I have been in the habit of dipping my lambs about every third year, which has entirely destroyed the ticks, and it has never injured the lambs.

Last summer I had over sixty lambs. I bought at the tobacco factory in your city four pounds of tobacco stems, (paid three cents a pound,) boiled it up thoroughly, dipped every lamb, and killed every tick; and so far from injuring the lambs; think it did them good.

Wait about two weeks after the sheep are sheared, and most of the ticks will then be on the lambs, and are soon destroyed, and no injury to the lamb if properly used."—M. DRAKE, *Franklin, Mich.*

"I noticed an article in your paper in which a correspondent gives his experience in washing lambs in a solution of tobacco, with a fatal result to the lambs; his solution was no doubt too strong, (using, I think, six pounds for some forty lambs.) I have washed my lambs in tobacco twice within the last ten years with the very best result; the first time I used one and a half pounds of damaged tobacco, boiled it in a large kettle, let it cool, and then put it in a tub, and dipped the lambs in, squeezing or pressing the wool with the hand on taking them out. I had thirty lambs, and dipped them three days after shearing.

I kept the flock of sheep I then had for four years after, and they were never troubled with ticks during the time; I sold this flock and bought a new one; three years ago the present shearing, they were very full of ticks; I then served the lambs as I have described with even a weaker solution; my sheep have been free from ticks ever since. Last year in shearing we did not find a single tick, and I have not seen one yet this spring."—C. K. CARPENTER, *Orion, Mich.*

The Cultivator.

"Give fools their gold and knaves their power,
Let fortune's bubble rise and fall,
Who sows a field or trains a flower,
Or plants a tree is more than all.

For he who blesses is most blessed,
And God and man shall own his worth,
Who toils to leave as his bequest,
An added beauty to the earth.

And soon or late to all that sow,
The time of harvest shall be given,
The flower shall bloom, the fruit shall grow,
If not on earth, at last in heaven."

The Cow.

In the present state of society in civilized countries, it would be difficult to determine which class of animals—the cow, the sheep, or the hog—is the most useful, or could be dispensed with at the least inconvenience to man. Perhaps the hog should not be included in the category, since good olive oil can be made from cottonseed oil, and the sunlight in coal is being bottled up for daily, or rather nightly use, in the shape of Kerosene or Stone Coal Oils.

My award would favor the cow first, and the second premium would be to the sheep. No animal upon the farm can return so much value to the farmer on capital invested as the cow. And if any man were told, for the first time, how much a well fed cow could earn in a year, he would consider the statement simply absurd. It is true the value is much enhanced by locality, for a cow near a great market, where milk can be sold at a high figure, will pay a higher per centage upon her value and keeping than one on the hills of Cattaraugus. Still, when compared with other branches of farming, the cow everywhere pays a wonderful profit upon the capital she represents.

The dairyman's success depends upon his cow. If he have a choice animal, that gives him a large quantity of milk, it is evident that for the food consumed he is getting a larger yield from the land than would be the case with an inferior one. But one thing is manifest in all the dairies which have been examined in this State (New York)—there is not a single one where the farmer makes the most judicious use of his cows. No one seems to be aware of the burthen which he places upon her, nor how much he loses by not aiding her to the best of his abilities in bearing it. The Israelites when in bondage, and compelled to find their own straw and deliver their regular tale of bricks, had not a harder task than is everywhere alotted to the patient, toiling cow.

To comprehend the extent of that task, let us examine, in the first place, the constituent elements of milk.

The question before us then, is, "what is milk?" The answer would depend upon locality, in a good degree, if left merely to the knowledge of the milkman, or the consumer. In New York, for instance, among the masses, it would be defined a bluish, whitish liquid, that has a tendency, when left at rest, to deposit a good deal more substance at the bottom than on the top. If the milkman were to define it, he would call it still-slops diluted and strained through the cow, and

slightly improved by the addition of a little starch and water.

But if seen and tasted when drawn from the cow's udder up among the mountains of Delaware county, where the cow feeds upon the richest herbage, and drinks from the purest streams, it would be defined an opaque fluid, of a white color, sweet and agreeable to the taste, composed of a fatty substance representing butter, a caseous substance for cheese, and a watery residuum.

These constituents vary in different animals. The following table from the analysis of Henry and Chevallier, exhibits the milk of several animals in its ordinary state:

	Woman.	Cow.	Ass.	Goat.	Ewe.
Casein (cheese,)....	1.52	4.48	1.82	4.08	4.50
Butter.....	3.55	3.13	0 11	3.32	4.20
Milk sugar.....	6.50	4.77	6.08	5.28	5.00
Saline matter.....	0.45	0.60	0.34	0 58	0.68
Water.....87.98	87.02	91.65	86.80	88.62	
	100.00	100.00	100.00	100.00	100.00

In view of the large proportion of water which nature has put into the composition of milk, it would seem rather unfair to dilute it before it passes into the hands of the consumer. Perhaps erroneous opinions are formed on this subject.

Haidlen gives the analysis of forty pounds of milk, reduced to dry material.

Dry material 5.20, of which was:

Pure casein.....	2 00
Butter.....	1.25
Sugar.....	1.75
Mineral matter.....	1.20
	6.20

As the secretion of milk in the mammalia is designed by nature for the reproduction and sustenance of the race, all the food consumed beyond that required for the sustenance of life in the parent, is absorbed in the milk, and that becomes rich or poor, or scant, or abundant, just in proportion as the food is abundant and nutritious, or scant and of a poor quality. If, then, it be the object to make the cow the most useful, by the richness and abundance of her milk, she must be supplied with that kind of food which will furnish for use the elements found most abundant in her milk. She must have a certain amount of food to enable her to maintain her body in its normal state. It is claimed that three per cent. of her live weight daily will accomplish this. But to supply the drain upon her system, in the milk she is expected to furnish, she must have additional food—and it is in the power of the farmer to so adapt that food to her wants that she shall not only maintain herself in good condition of body, but maintain a large flow of milk, rich in the elements of butter and cheese.—*Valley Farmer.*

The Use of Straw.

All larger animals require a litter of some sort; a warm, dry and soft bed is quite indispensable for their comfort. A wish to save straw occasionally leads to a sparing use of it in the yards, but always results, however, in the immediate discomfort of every head of stock. The best of food, and unlimited, attention, will not compensate for the want of a comfortable bed. Frequent supplies of dry litter in beds and yards are absolutely necessary.

It is an interesting fact that well fed cattle, kept in open yards, will eat more straw during the winter months, than other cattle kept under the warm shelter of a roof. This fact indicates the value of straw as food for maintaining warmth. Straw is not sufficiently digestible and nutritious to be a desirable addition to the food of young animals. It is recommended that when cut straw is to be used for feeding cattle, it should be cut the previous season and packed away, with one bushel of salt to one ton of chaff, the heap to be well tramped; fermentation will then be induced. None but those who have tried this plan of old chaff so managed, as compared with fresh cut chaff, can believe the advantage in value of the old chaff for feeding cattle.—*Jour. Royal Agricultural Society.*

Perfected Tomatoes.

Last winter Mr. C. E. Lester sent out many seeds of a variety of tomatoes, for which he claimed great superiority as being smoother, larger, thick-fleshed, pulpy and rich. We gave publication to his advertisement, and reprinted some of the puffs which the fruit had gained from several parties, with considerable misgivings.—Now, however, we do most heartily commend them as more than answering reasonable expectations. For aught we see it is as prolific as any variety, not higher flavored than any other good kinds, but having so smooth a skin, free from wrinkles or other blemishes, so large and bright-colored with all, that they really deserve the name they bear, and, so far as we can judge, *ne plus ultra* may be predicted of them.

We know of no more delicious table vegetable than the tomato, nor one more healthful, nor one susceptible of more agreeable combinations, not even excepting the potato, and this really very much improved sort must commend itself to every lover of the fruit. Save the seed and distribute it as widely as possible among neighbors and friends.—*Homestead.*

Top Dressing Grass Lands.

Now is the time to commence the preparation of materials for this important work. Some persons doubt whether the application of manure to the surface of grass land is the best mode of using it. This depends upon two or three circumstances, viz:

1. Upon the nature of the soil.
2. Upon the time of application.
3. Upon the condition of the pressing.

Top dressing will continue to bring a crop longer on a moist soil than on a dry one, first because such land is the best adapted to grass, and secondly, because the manure, by being kept moist, is brought into a state of decomposition, and becomes prepared as food for the plants, instead of drying up. Top dressings, therefore, for high lands, should be applied in the spring, as early as March or the first part of April, so as to receive the early rains, and get thoroughly leached, and the coarser particles washed down among the roots of the grass, before the hot and dry weather comes on. Or, it may be applied—and perhaps with better effect—late in November, when it will receive the later rains and be leached by them, or be covered with snow to be melted upon the dressing, and thus carry its fertilizing properties gradually to the grass roots during the winter and spring.

It is unpopular—we are fully aware—to recommend top dressing for high and dry grass lands; still we believe it to be a profitable way of fertilizing, when it is done judiciously. The error consists in cropping the land for many years, without manuring until not only the fertilizing agents are exhausted, but the *roots of the grass themselves* have either died for want of food or have been driven out by plants more hardy and persistent than themselves. When a field is in this condition, it is folly to top dress it.—There is no basis upon which to act. The dressing was deferred too long—there is no recuperative power left. The remedy for such land is through the plough, manure, cultivation, and *plenty of seed*, or all these, excepting the cultivation, which may be omitted by turning over the sod and laying down in August, or early in September.

In a wet season something may be done on high land by spreading fine compost manure liberally, scattering on grass seed and harrowing.

Clover, sown early in April, in this way, will sometimes succeed well. If the farmer would be watchful, manure his fields in season, occasionally scattering a little seed over them, while producing liberal crops, he might save considerable expense in ploughing and re-seeding. All this, however, should not prevent a judicious rotation of crops, and, in turn, bringing the grass fields into cultivated ones, which is undoubtedly the course that will secure the most certain profits.

The *time* when top dressing should be applied, is a question upon which our best farmers do not agree. What is needed, is a copious rain immediately after the dressing is spread; but as we cannot command this, we must exercise a sound judgment in the matter and be content with the result. If the compost cart could follow that which carries away the hay and a liberal shower follow, perhaps there would be no better time to apply the dressing; and in a moderately moist season, this course will succeed well. March and early April are good seasons, but then the objection exists of cutting up the fields by the feet and wheels of the team. In the autumn there is little danger of this, unless the season be very wet, the more pressing work of the warm season is out of the way, and upon the whole, perhaps this is the best for this operation. The third point requiring care, is the condition of the dressing when it is used. It should be rich, that is, made of good materials, and fermentation not carried so far as to set free its gaseous properties, and then it should be fine—if as fine as sand so much the better. This will allow of its being spread evenly, and present such a surface to the rains and dews as to have every part of it quickly penetrated and its fertilizing properties carried to the roots below.—*N. E. Farmer.*

Feeding Swine.

Mr. Taggart, of Wayne county, at the annual meeting of the Ohio State Board, said he was not in favor of feeding hogs long, to make them weigh large weight. He kept his in the clover field till the beginning of September; then, when the corn begins to harden, cuts it up, both ear and stalk, and feeds it to them. "One bushel of corn in September will fatten more than one and a half in December." Mr. T. recommended killing by the 15th of November as being the most profitable time, for then there has been little expenditure of carbon for the production of heat, when, if left for another month, the cold, wintry storms make this necessary.—*Valley Farmer.*

THE CURCULIO AND THE GRAPE.—In examining a small vineyard lately, we found one bunch of grapes, every berry of which was marked with the crescent of the Curculio.—*Hort.*

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☞ Will not our subscribers who received bills in July, do us the favour to remit promptly the small sums they owe us? We are very averse to dunning, but we know there are a great many among them who fail to attend to our call, not from necessity, but carelessness, and it is only in this way we can afford to stir them up by way of remembrance. Please remit by mail without delay.

"PATUXENT PLANTER."—We welcome our long time absent correspondent, if it is only "foreign" matter he sends us; we like his domestic manufacture better. His suggestions are prudent and wise as to "home-spun" and "home-brewed," and they are signs of the times—hard times.

Dry, Clean, Rich.

In some remarks last month on the cardinal qualities of a good arable soil described by these terms, we attempted to show how much was embraced in the first of them, and how much of science, observation and experience were required for the proper understanding of the term "dry," as applied to the soil. Let us turn our attention now to the second and third.

In a "clean" soil, as the term is sometimes understood, we mean that condition which is effected by what are called "cleansing crops"—such crops as by the process of their cultivation or their dense growth, or both combined, reduce excessive accumulations of vegetable matter into available food for the more valuable plants. For example, this condition is brought about by the growth of corn or tobacco or some other hoed crop as a mode of preparation of such lands for the profitable growth of clover. This valuable forage plant and fertilizer, it is well known, will not flourish on the richest soil in the presence of a great deal of undecomposed vegetable matter, but grows often very luxuriantly under a course of cultivation which would seem to have exhausted the soil of all its available supplies of plant food. Wheat and other small grains and many garden vegetables prefer also a soil the constituents of which have been reduced to a condition to suit their more refined tastes.

But the term "cleansing the soil" is more commonly applied to the processes of ridding it of noxious weeds. The intelligent cultivator must make the acquaintance of these enemies, and learn to distinguish them from friends.—Some of them, as cheat and garlic, and many more that might be named, are familiar enough, but there are thousands, of the character of which the mass of farmers are ignorant, which make their inroads stealthily upon him, from neglected fence corners or road side, or waste spots. To know all such plants, and how to prevent as well as how to be rid of them, requires intelligence as well as watchful diligence.

There are some which no possible attention, either to prevent the spread of seeds or to eradicate when they have taken possession, are of any avail. Their growth seems dependent entirely on the condition of the soil. The common *sorrel*, for instance, will grow most certainly in certain conditions of the soil, and as certainly perish when those conditions change, without any reference to the quantity of seeds in the ground. A person ignorant of this fact might waste any amount of useful time in clipping off the seed stems to prevent the spread of seeds, or in digging out the plants to avoid increase from the roots. Again with the common "rag weed," a novice seeing for the first time a fertile stubble field six weeks after harvest, would think his land ruined if the bushels of seeds were allowed to mature; but further experience will show him that the rag weed, however abundantly seeded, is guiltless of further harm until the same circumstances shall invite another crop; when its return will be as certain without as with the previous seeding. These facts indicate that a great deal of useless labour might be expended in a determination to have our lands "clean," unless our efforts are directed by intelligent experience as well as some scientific knowledge of plants and the conditions of soil in which they flourish.

Passing now to what constitutes a "rich" soil and how to make it rich, what a field of inquiry and discussion does the learner enter upon? The

whole subject of domestic manures, with their management and application; the proper use of fertilizing plants; lime, guanoes, superphosphates and all the various preparations—good, indifferent and bad—in which the farmers have in ten years past spent millions of dollars, and which have engaged the attention and challenged the investigation of the wisest men of science in all civilized countries; all these are embraced in the consideration of the term "rich," as applied to soil.

Let it be confessed then, that he who would have his soil "dry, clean and rich," as understood at this time, must be something more than a diligent clodhopper.

CORRECTION.—In the note of Dr. Baer last month on a report of Mr. C. Woods, in which the death of his cattle is attributed to eating fodder on which was smut, the opinion that "smut in wheat and corn, and ergot belong to the same class of poisons" was credited to Mr. Woods. It should have been expressed as the opinion of Dr. Baer.

Product of Milch Cows Dependent on their Treatment.

A dairyman somewhat noted for producing a large amount of cheese annually from his dairy, said to us in a recent conversation, that one of the secrets of his success in this respect was the careful manner in which he treated his herd.—His cows were driven to the stables leisurely. No dogs were used for the purpose of driving the cows, and persons in his employ who were found striking or in any way abusing a cow were discharged on the instant. Let the cows have an abundance of food, and take their time in coming to the barn, especially in hot weather—milk clean and regularly, and from fifty to a hundred pounds more cheese can be made per cow, during the season, than when the animals are dogged out of the field night and morning, or kicked and pounded and frightened for every little mistake they are supposed to make. Some people make a great mistake in overstocking, and too little attention is given to the treatment of stock, summer and winter. The dairyman should consider a moment whether 30 cows, yielding 600 pounds of cheese per cow, are not as profitable as 40 cows whose annual product is 400 pounds per cow; and yet hundreds of dairymen seldom if ever think of this matter, but go on after the old manner, trusting to luck for an increase in dairy products over that of former years.—*Cor. Dairy Farmer.*

Cultivation of the Quince.

Why is the quince bush so generally condemned to some out-of-the-way corner in the back-yard, where old shoes, broken crockery, and other household rubbish are thrown? When properly cared for, it is a beautiful ornamental shrub, with blossoms superior to those of many a prized foreigner; and its habit of growth makes it an admirable connecting link between the smaller shrubs and the standard trees.—What more beautiful sight in autumn than its bended limbs loaded with golden fruit? And what housekeeper thinks her winter stores complete without quince jelly, marmalade, or the fruit preserved plain? The treatment of the bush has been shabby, and very often it has come into disfavor because it did not repay neglect with a fine yield of smooth, handsome quinces. But it responds well to generous culture, and fruit growers have found it a profitable crop for market.

The quince should have a rich, deep, mellow soil. Although the roots spread near the surface, depth of soil is needed to guard against drought, to which the tree is very sensitive. The apple quince is most prolific, and the fruit is generally preferred to other varieties. Deep cultivation, such as is required for the standard pear, will not do for the quince, because of the shallow depth at which the roots grow. A light hoeing, and mulching with tan bark, leaves, straw, or other suitable material, must be depended on to keep down weeds and supply moisture. An annual dressing of the surface with salt is generally recommended, but respecting the utility of this we have some doubts. Little pruning is needed, only enough to clear out suckers and sprouts, and prevent robbing of the branches. The apple tree borer often attacks the trunk, and the same precaution is necessary for prevention as in the case of the apple tree.

The quince is easily propagated by cuttings or layers. Seedlings are not certain to be true to kind, and it is therefore preferable to procure stock from a growing tree, if rooted plants of known variety cannot be obtained.—*Ex.*

THE CURCULIO IN THE BLACK KNOT.—Dr. Trimble has brought us some Curculios, in various stages of transformation, taken from the black knot on the cherry. They are precisely identical with the Plum Curculio, a fact which we have before demonstrated. We think there can be no doubt that the Curculio in the knot, and those in the cherry, plum, apple, &c., are all one and the same.—*Horticulturist.*

Garden and Orchard Fall Work.

"We desire to call attention to the following hints from the late A. J. Downing, who was the best theoretical and practical pomologist of his day, and thus far has been succeeded by no one, who fills his place, notwithstanding there is a great number of itching aspirants. The information he communicates, is not book found, or the views of others, perhaps residing in other countries and climates; but the result of his own daily experience. What he says in the annexed article, no one can gainsay. It accords with all enlightened practice—it is in consonance with reason—it is common sense illustrated, and we hope it will be received by every one who wishes to take advantage of the superior knowledge of others, even though it may conflict with his own established views and prejudices. We have made it a rule of life to accept all information that may be new and promises to be useful, let it come whence it may. But here we have laid before us the practical workings of a theory, from the highest authority—and we have nothing to do but to receive it. Our own limited experience, moreover, affirms its correctness and value."—*Val. Far.*

"When the month of November comes, it is worth while to look about a little, and see how you stand in the garden and orchard. You must be a miracle of expertness if you have not failed in some crop or other, or if some tree or plant has not baffled your wits. Well, this being the case, now is the time to look about, and resolve either that you will succeed better next year, or that you will abandon that crop altogether.

So, go into your kitchen garden. If your soil is poor, or worn out, and full of insects, this is the very time of all others to doctor it; and here is my prescription, which I have proved over and over again: Clear off the plot of ground to be renovated, and cover it with a good dressing of *fresh stable manure*, with the litter in it. Begin at one side of the plot, and throw up the soil into ridges, digging it about eighteen inches deep, and mixing the manure through the soil as you dig. Here let it lie all winter. The atmosphere and the frost will have a grand chance to do their best in bettering the quality of the soil itself; and the essence of the manure will not only be all taken up by the soil, but its coarseness will be broken down by the spring, so that your plot will be in the best possible order for vegetables, when the swallow comes.

If you are troubled with grubs and insects in the ground, (and you must be something more than a "big bug" yourself, if you are not,) then you must also treat it with a dose of salt. Scatter any refuse or coarse cheap salt over the earth, before you begin to ridge it up, at the rate of a bushel to the eighth part of an acre—or eight bushels to the acre. Put on this season, it will do no harm to anything vegetable, and will thoroughly rid you of these enterprising little gentry, that crawl out of the ground in May and June, and quietly play Guy Fawkes to the roots and stems of the tenderest things that the pot boils. Besides, leaving out of sight the virtue of salt as a manure, it helps all *dry* soils amazingly, giving them greater attraction for moisture, and greater power to hold it in dry weather; and that is no mean thing for a crop that gets thirsty in midsummer.

In the review of your forces at this season, before they go into winter quarters, it is ten to one but you will find, staring you in the face—possibly not ten paces from your door steps—some excellent old friends, whose acquaintance you begin to be ashamed of, and are sorely tempted to cut at once. I mean some good old *fruit trees*, still very sound and healthy, but utterly refusing, for years past, to bear any good fruit. Possibly they are Virgalieu, or Butter pears, Pippin, or Pearmain apples, whose good name is a thing handed down to you by your ancestors; and you are therefore not a little sorry to *cut* them. Don't do it. Let us have a little talk over these trees.

Did they ever bear good fruit in this soil?—"Bless you, yes;—such fair golden skins, and luscious, melting flesh, as I seldom see now-a-days." How long ago is it that they have stopped bearing such fruit? "Say a dozen or fifteen years." What have you done for them? "Not much—scraped the bark, washed it with soapsuds—spread a little compost over such as stand in the grass. Those that stand in the garden, you know, are in good, rich soil; so, of course, they could not want for manure."

This is what my friend says; but I don't believe a word of it—I mean of the last part, that they "don't want for manure." If I were a "Hoosier," or a "Buckeye," I should say they don't want "anything else." Have they not the same atmosphere to breathe, the same rain to drink, the same climate to enjoy, as when they bore the fine crops of fruit which you lament?—What has changed? Nothing—absolutely nothing—but the soil.

Need I go any farther to establish this? I hope not. But the soil is pitiably *run out*—run out, past the power alone of stable manure to bring it up again. It is run out, as the chemists say, in "lime and the phosphates." But it can be re-

novated, just as surely as there is manure, and lime, and the phosphates to be had; and you may set about it now, if you please, for this is the best time in the world to begin.

Now, to do this well and thoroughly, will cost from two to three dollars a tree, labor and all included. An old officer of this sort, that has been off duty and on half-pay for ten or fifteen years, can't be brought into active service again without squaring up old accounts somewhat; and you must make up your mind to this, or else have no farther fruits from the old veterans.

Supposing we commenced with a middle-aged pear or apple tree, with a sound constitution, which has been sulking for some time past on half-pay. Now, it is all very well to say that this tree don't want animal manure. Its roots have been in the same place for twenty-five or thirty years, with only a little sprinkling of something stimulating over the tops of the soil, which the grass, indeed, has pretty much to itself, or a slight yearly dressing of compost (if it has stood in the garden) which the vegetables have devoured. Look at its little short-jointed shoots and unthrifty growth, and you will see that, first of all, it wants manure.

Very well. Now clear away everything in the shape of trees, shrubs, bushes, or vegetable of any kind that stand within fifteen feet of the trunk of this tree. Next, bring a good two-horse wagon load of fresh stable manure and trench it under as deeply as the roots will let you, and particularly *beyond* where the roots extend. It is as foolish to put manure within five or six feet of the trunk of a tree, as it would be to pour drink over the back of a thirsty man. At the *very outside of the roots*, trench the soil two feet deep, and mix the manure with it, leaving it rough and loose for the winter; for it is there—at this outside limit—that the roots will get a good living again.

But this is not the whole which is to be done. Remember that lime and the phosphates must be supplied, for it is above all these that old soils grow poor in. It would not do to put them in with fresh manure, since they would not agree well together, but would go to decomposing one another, instead of making a succession of good dinners for the "feeders"—that is to say the little fibres of the roots.

But next spring, as early as the soil is dry, you must apply to each large tree manured in the fall two bushels of ashes and a peck of plaster of gypsum, and if it be a pear tree, a half bushel of bone dust. If it is an apple tree, you may substitute a peck of air-slaked lime for the plaster. Spread this evenly over the soil that was dug and manured last autumn, and mix through the whole with a stout three-pronged fork. This will bring the soil to a good condition again; and the old tree will speedily commence making new roots, setting new fruit buds, and the next season begin to bear fine fruit again. And this I do not give from theory, but from actual trial, under the most unfavorable circumstances.

I do not tell you to prune your tree, because I very much doubt the wisdom of it the first year. I would only see that the bark is clean and smooth, and give it a little more *soft soap*, if necessary, in that quarter. After the tree has begun to exhibit the signs of feeling the *full pay* you have given it—say twenty months hence—then you may, if needful, prune it moderately. When, indeed, the tree is partly decayed or broken, or full of tangled and cross limbs, I would be a little severe with it at first, but not otherwise.

This is the season when a shrewd old digger should go over his peach and plum trees, scrape away the earth about the bottom of the trunks, and look for that little rascal—the peach worm. If he is there, expecting that "there is a good time coming," now that he is in such comfortable winter quarters, you will know it by the gum, by which the tree always shows to its natural protector the presence of its enemy. Wherever you see this gum, take your knife, open the bark, and take out the vile grub. If he stays there a few months longer, he will completely circumnavigate the trunk; and after he has been round the world in this manner there are no more peaches for you. It is a matter of five minutes to a tree, and if you grudge that pains for rare ripes, the grub will take five months at it and get the better of you.

If you are planting fruit trees, don't be so foolish as to set "tender trees," such as apricots, nectarines, and so forth, in warm sunny places, on the south side of walls, fences, and gardens.—Such are, depend on it, the very spots to kill them—between the extra heat of mid-summer, and the constant freezing and thawing of the trunk in winter. You had better choose a west, or, if not too far northward, even a due northern exposure. The latter is much the best in the Middle States.

Never plant a tree with small roots and large top—when the roots have been made small by the spade in digging—without making the latter small also. There must be some ballast in the hold to carry so much sail on the mast, as an old salt would say; and you will gain in the health

and size of the tree, three years hence, by shortening back the *ends* of the longest limbs till you have struck a fair balance between the part that collects food and the part that consumes it."—*A. J. Downing.*

Variation in Plants.

An article which is calculated to produce some surprise among persons who have studied the habits of plants, has appeared with the authority of Dr. Lindley, in the *Gardener's Chronicle.*—Among the startling assumptions in this article are the following:

"The tendency to produce a variable offspring is inherent in the constitution of every plant, and is a necessity of its existence; there is no such thing as a repetition of the parent in the progeny."

"Nature supplies the gardener with varieties, and all he can do is to exert his skill in choosing which of them is best suited to his wants and again selecting from its progeny what is still better suited, and so on till his wants are satisfied,—there is no reason to suppose that the first progeny of the seed, had it been left to itself, would have differed aught from that it produced under the gardener's care."

We find so good a reply to these ideas in an editorial article in the last number of *Hovey's Magazine*, that we use some of the remarks instead of our own. In regard to the first paragraph it is observed:

"We might name a hundred instances where, for at least the life of an observing man, there has been no change in the growth, appearance, and flower; that they have been, year in and year out, just the same, and probably so for hundreds of years. We have but one species of Tulip-tree (Liriodendron tulipifera,) and yet a naturalist found the fossil remains of this very species one hundred feet below the surface of the earth in one of the deep cuts in California, as stated in *Silliman's Journal*, we think, for 1858. How many hundred or thousand years had it been buried there? and yet we have the exact copy of it now. Does this show an inherent power to change readily? Has the commonest flower that grows in our pasture—the dandelion—shown any disposition to change? Is there a very pale yellow, white or variegated variety? We think it would puzzle Dr. Lindley or Dr. Hooker to tell the dandelion of to-day from that of twenty years or more ago; that at least here is 'a repetition of the parent in the progeny.' The old dogma, that 'like produces like,' still holds good, at least with plants."

On the second paragraph above quoted, our contemporary remarks as follows:

"The theory of Van Mons in raising new pears disposes of this. Since the creation of the world, or at least since we have known anything of its vegetation, the wild pears, left to themselves, have continued the same; but under the skill of Van Mons they were altered in five generations from their austere, uneatable character to the most luscious fruit. Did nature do this, unaided by Van Mons? Shall we then be seriously told that all he did was in choosing which was suited to his wants, and that there is no reason to suppose the progeny, if left to itself, would have 'differed aught' from that it produced under his care? We are not combating the doctrine that plants have the inherent power to change, as we know this to be true, but we do not believe these changes are easily made, and in fact, rarely if ever naturally, for to admit this would admit the power to annihilate species; many of our hybrids being more unlike than many of the so-called distinct species. Under certain circumstances, and these principally include cultivation, they soon show signs of variation, and these variations, taken advantage of by the gardener, go on changing until they are again neglected, when they cease to vary to any extent. What is more common than to see many of our beautiful annuals, as soon as they are left to sow their own seed, degenerate to the original species. Asters, self-sown, in a year or two become single. Pansies of the most beautiful description, self-sown, soon return to the commonest weedy flowers. No fact is better known to all gardeners than this. This may be one of the 'inherent powers of change,' and it would not require a great exertion 'of skill' to select the best suited to his wants from such a progeny. Such well-known changes with certain flowers, and even vegetables, are so common, that it at once refutes the idea that 'the tendency of successive progenies is to depart further and further from the original standard, and seldom or never return to it.'"—*Ex.*

To Preserve Smoked Meat.—How often are we disappointed in our hopes of having sweet hams during the summer, after carefully curing and smoking, and then sewing them up in bags, and whitewashing them? Now this can be avoided by packing them in pulverized charcoal.—No matter how hot the weather, nor how thick the flies, hams will keep as sweet as when packed, for years.—*Ex.*

Low Branching Fruit Trees.

BY WILLIAM BACON, RICHMOND, MASSACHUSETTS.

In years gone by, as the remaining trees in old orchards show, there was an almost universal practice of throwing the tree-tops high into the air; first, by allowing the trunks to arise some six or seven feet before they throw out branches; and second, by pruning the branches near the trunk, leaving merely a tuft of limbs at the extremities of these naked arms. These outside tree-heads, formed on branches that had the appearance of *artificial* trees thrown out from the trunk, of course receded further from the main body of the tree each year.

The disadvantages of this way of growing trees are, their greater liability to be shaken and broken by high winds; the longer the lever, the greater the power in raising heavy bodies; the further the heavy tree-top is removed from the earth, the more power the winds will exert to overturn a tree. Then the branches are more liable to be broken by the weight of the top being far removed from the trunk, or, if not directly broken, they are severely twisted, and thus made unhealthy, which, in due time, insures their decay.

The fruit on such trees is much more liable to be prematurely blown off by high winds; they are gathered with much more difficulty when mature. If the tree is shaken, as is still the custom with many, it is sadly bruised by the fall from these high tree-tops; and if picked off, the danger to life and limb in the operation is increased in a greater ratio than the increasing distance from the ground.

But there is yet another objection to this method of tree-forming, fully equal to, if not greater than all others. Sap is the life of the tree, and the excess of sap goes to perfect the fruit. The longer the trunk and branches of the tree, the more of this must go to support the wood; the more the small branches are thrown into tufts at the extremities of large limbs, the fewer will be the leaves to elaborate sap for the nourishment of the tree, and perfection of the fruit; consequently, a feeble tree and small and inferior fruit will, in the end, be the result of the miserable system.

By the above noted system of tree-growing, they are more exposed to the ravages of insects. The more bare wood, and greater exposure of it to atmospheric changes, the feebler the tree, and more subject to attacks, not only of the hosts of animal depredators that feed most greedily upon such trees; lichens gather on them more readily and feed on their very vitals. Any one must know that these evils cannot be so readily contended with on a high, ill-shapen tree as when near the surface; so that, besides the increased amount of danger from the evils alluded to, the difficulty of obviating them is so much increased that, in a sort of indolent discouragement, they are neglected, and old, moss-covered, worm-webbed, insect-bored trees in a few years take the place of what may now be a young, thrifty and promising orchard.

When nature raises trees she does it on her own economical plan—one best calculated to give health and long life to her subject. In the forest we see trees shoot up their tall, mast-like trunks with a few branches at their extremities. Such trees are protected by surrounding trees while the forest remains; but remove the burden of timber, and how the remaining trees are rocked and shaken by the wind! How often their beautiful heads are decapitated by the raging storm! Who ever saw such trees on the border of a wood lot, or standing in isolated positions about fields? Such trees, if on the border of woodlands, throw out branches near the ground, to shield the body of the tree from storms and sunbeams. And the specimen of unrivalled symmetry in the field—how low its branches, and how beautifully it throws its long arms abroad. Yet these arms are not the naked ones that invite disease, but all along their length they throw out little branches, from each of which a clump of leaves appear to aid in furnishing the tree with healthy life-blood. If these branches become too numerous, or if the weaker interfere with the stronger, nature prunes and casts off what is superfluous.

But to our fruit trees. The best specimen of an apple tree we ever saw, made its head so near the ground that a person can without difficulty step into the lower branches, and these branches spread so low that the fruit can be gathered without difficulty by a person standing on the ground. They are long branches, and the top of a tree forms a symmetrical hemisphere. Neither the axe nor the saw has been accessory to forming that tree-head. The hand and the pruning-knife directed the first starting of these branches, and here they stopped, unless two combatant branches so interfered with each other's rights that one of them must be removed. This tree-top is so dense and so wide, that the hot midsummer sun cannot send his fiery rays to scorch the unprotected part of the tree. They fall upon its leafy head, and the warm atmosphere is diffused along the trunk and among the branches. No insects have ever disturbed the tree, unless it were some straggling worm that so far forgot the rules of propriety

and honor as to commence its web among its branches. And, what is far better, it has never failed of a crop since it commenced bearing.

Low trees come into leaf, flower, etc., earlier than tall ones. A pear tree seven feet high had branches within a foot of the surface of the ground. The lowest branches were in full leaf before the buds on the top of the tree had developed the color of the leaf. And a plum tree, with branches near the ground, gave blossoms on the lower branches from a week to ten days earlier than they appeared in the upper part of the tree. Let the difference continue in the same ratio through the season, and many of our fruits would be raised in much higher perfection than they now are.

We have no doubt but many of our old orchards have been injured more by injudicious over-pruning than in any other way. Tree-pruning was almost a mania. It must be done every spring. The lower limb must be taken off, and that branch pruned as far out as the operator dared to venture, and could reach with the destructive axe. Such a system of tree-torturing and tree-mutilating could not be otherwise than destructive.

[Here are important truths, forcibly put.—There is one point that we should have made stronger, and that is, that low-branched trees come into bearing at an earlier age than others. We think there can be no doubt at all about this—it ought, therefore, in connection with other manifest advantages, to determine our treatment of fruit trees. We commend Mr. Bacon's remarks to serious consideration.—ED.]—*Hort.*

Experiments in Covering Land with Straw.

We have several times recommended covering grass and clover lands with straw or other fibrous litter, for we have often witnessed the benefits of the practice in a very marked manner. Every farmer has observed that if a bush is left lying in a field of grass, the vegetation beneath it will soon look finer and fresher than any around it. Such little facts are sufficient to impart instruction to those who seek to learn. The fact is known to every one, but the agency by which the increase of growth is brought about, involves a principle which has not been sufficiently investigated. For the present, however, we will content ourselves with the fact, and proceed to give the results of some experiments, which we have gathered in the course of our researches on the subject. Part of a field of grass which had been placed under this operation for one month had increased in weight over the remaining portion left uncovered at the rate of three to one. The green grass from the part untouched, cut at the end of the month, weighed two thousand two hundred and seven pounds per acre; that of the portion placed under the operation weighed five thousand eight hundred and seventy pounds per acre. The grass was weighed as it came from the scythe. During this period there was no rain—and guano, lime, wood-ashes, and other manures tried against it, produced, during this period, no visible action. In this experiment the covering was laid on the 15th of April, and the grass cut and weighed the 20th of May. In another case half a hay field was covered on the 2d of May, and a month after both portions of the field were cut and weighed; and it was found that the grass from the covered portion weighed three thousand four hundred and sixty pounds, while the other weighed only nine hundred and seventy pounds. It was found, on converting the two samples of grass into hay, that the proportionate loss of weight was the same in each parcel; and the difference would be, that in one case the yield would be three tons to the acre, and in the other only one. Another most important circumstance in the case was, that when a certain quantity of animal manure would double the quantity of grass in a given time, when laid on in the usual way, it would increase it six times when perfectly treated with a covering of straw.

These are certainly very curious experiments, and they have been repeated successfully by various individuals. They all gave uniform results when conducted fairly. Some used too much covering, but generally too little. All these experiments showed that the action was general, and that the difference in the increase of growth in a given time was in proportion to the natural fertilty of the soil.

These facts clearly indicate the practical benefits to be derived by making this disposition of the refuse straw on the farm, which the owner oftentimes hardly knows what to do with. If there is any vegetation on the land, however stunted, whether of the natural or artificial grasses, its growth will be greatly increased, and the land proportionately improved. And frequently in the time of drought, the young clover which had been seeded in the spring, has to go through a severe ordeal in the next summer.—The covering recommended would secure it from perishing, probably ninety-nine times in a hundred. A very slight sprinkling, say two wagon loads to the acre, or even less, would effectually preserve it.—*Farmer's Journal, Petersburgh, Va.*

Cultivation of Cranberries on Uplands.

The first attempt at the upland cultivation of the cranberry was made in the spring of 1854, by setting out some 12 or 15 feet square, with the cranberry; these vines produced in the fall of that year about one pint of very perfect, dark-colored fruit. The vines then set out without the least farther attention to their cultivation, have continued to bear fruit each year, and are now in a perfectly healthy condition.

In 1856, I planted out 14,400 square feet of land, walks included, less than the third of an acre, from which I gathered, in the fall of 1859, twenty-five bushels of cranberries. In 1860, I gathered from the above piece forty-two (42) bushels, an increase of 78 per cent. on the crop of 1859.

At the present time, Aug. 24, 1861, my vines are in fine condition, and well set with fruit. The season has been unusually dry; many crops have suffered, but the cranberries do not seem to have been at all injured.

I now have two-thirds of an acre in my garden appropriated to the growth of the cranberry. My success has induced many persons in this vicinity, and elsewhere, to commence the cultivation of the fruit.

For successful cultivation, the land should be thoroughly broken up, all foul stuff removed, carefully raked, and brought as near level as can be; then laid out in lines 30, 36 or 48 inches apart—distance to be regulated by the system which may be afterwards adopted in the cultivation. Open the earth with a spade about six inches wide, and insert *single* plants at twelve inches distance from each other, drawing back the earth to the roots, carefully packing with the hand. The ground should be kept free from weeds. The vines have a great tendency to cover the space between the drills; but as most lands, unless frequently broken up, become foul, continued cultivation becomes necessary; cultivation also evidently adds largely to the high quality of the fruit. When cultivating, lift the runners covering the ground, and place them beside the drills, where they will gradually throw out rootlets and become part of the drill. My vines were set in drills at 30 inches apart. *I use no manure, and have never irrigated.*

The vines do best by being set out after the vernal season has fairly commenced. With spring or early summer warmth the vines grow vigorously, throwing out long runners the first season; the runners produce uprights the second season; the uprights fruit the succeeding season; each year, the first included, fruit is produced, gradually increasing to the fourth year, including the planting season, when an abundant return may be anticipated.

My observations extend over several years, (from 1854 to the present time;) I have yet to witness any injury to the cranberry vine from drought; my vines are 57 feet above any water, have to depend for moisture upon the rains from heavenward, and the dews from Long Island, from one or the other of which they have thus far been copiously supplied. They were taken from swamps and marshes, and put upon soil apparently unnatural to them, yet they thrived. I believe the lands of Long Island, (a spur of land projected 130 miles into the ocean,) to be peculiarly adapted to the cultivation of this fruit. Neither must I let the occasion pass without recording my thorough conviction that the soil in the middle of the Island, for a great extent in length, is equally well adapted to the growth of clover, the cereals, garden vegetables, and fruit. Skill, care and energy are all that is wanted.

J. C. Young.

Lakeland, L. I., September 28, 1861.

Sweet Clover.

The *Melilotus Alba* was originally introduced into this country as a plant specially suited for stock feed, feeding green or dry, but so far as we know, not used to any extent for that purpose, but almost entirely for ornamental purposes in gardens and yards, for its perfume, which, when in bloom, is much admired by many. G. W. Hatch of Princeton, Ill., has recently patented a process for using the extract of the plant in the manufacture of all kinds of leather. Mr. Hatch says the plant has the following qualities as an ingredient. "It is an emollient; it modifies and softens the caustic nature of strong astringents usually used in tanning; it causes dark colored tanning substances to produce beautiful oak colored leather. It also possesses a Muco-Saccharine nature which gives to leather a desirable condition seldom attained by American tanners, namely, a cheesy or waxy condition through its whole body." In curing the plant it is desirable to cure it in the shade as much as possible, when tanners can well afford to pay $20 per ton for it. As this process of tanning becomes known and used, it will no doubt cause a large demand for the plant, and those who have patches of the clover would do well to save the seed this year. We have seen samples of calf skins tanned in six days by this process, which appeared to have all the good qualities of any other mode of tanning.

Rusty Straw Affecting the Health of Horses.

This diseased condition of straw is sometimes known as red-rag, red-gum, &c. Balfour says it is caused by a fungus called *Urido Rubigo*. It forms yellow and brown oval spots and blotches upon the stem, leaf and chaff. This disease attacks wheat, but spring wheat is less liable than winter wheat, and heavy soils are less subject to it than light ones. Unger entertains the idea that blight, mildew and smut are to be considered as exanthematous diseases of plants, caused by the spores of fungi entering the stomach. I observe by the monograph on the table before me, by a veterinary surgeon to the 20th light dragoons, that on the arrival of his regiment with about two hundred horses, the horses continued healthy, being supplied with good forage. Some of the straw, however, was rusty. A few days after the regiment arrived, the straw supplied was worse and several horses fell ill, being mostly attacked by violent cholic, so that in three days fourteen were affected with disease; but with the exception of two old horses that were ill for three days, the disease was only of a few hours duration.

The horses that partook most of the rusty straw were the most severely affected. In seven days thirty had been affected, and two veterinary surgeons drew up a report, condemning the forage. This opinion was rejected by others called in to inquire into the matter. They attributed the evil to the water, of which, however, the horses had always drank whilst enjoying perfect health. After considerable annoyance and litigation, it was recognized that the rusty straw, and even bad hay, had given rise to much disease and death amongst the horses of the regiment.

During eight months, out of seven hundred horses, it is recorded there were constantly from forty-five to fifty in the infirmary, and in the month of November, as many as sixty-two.

The deaths were by those diseases which always prevail when animals are badly nourished—stomach staggers, cholic, marasmus, glanders and farcy, skin diseases, catarrhal affections, œdematous sweatings, &c.

Several experiments have been instituted by veterinary surgeons to prove that diseased or rusty straw is very injurious, and not only have successful experiments with the straw been made, but a decoction of it induces loss of appetite, the animal becoming thin and sickly.

Rust or mildew in plants has been accused of causing many epizootic diseases, as the great loss of sheep in Franconia, and of a contagious malady affecting cattle and even the silk-worm of Padua. After the country was inundated, the grapes, fruits and leguminous plants were affected with rust. Also of the plagues which ranged in Hesse, Hungary and Saxony, amongst animals simultaneously and recognized as the result of mildew affecting vegetables. Gerlach has known it to produce abortion and inflammation of the womb in ewes.

For further information on this important subject, I would respectfully refer to the writings of Gamgee, Numan and Marsh, and on the noxious properties of plants affected with rust, &c.—R. McCLURE, *in Farmer and Gardener*.

Top Dressing.

The inquiry is often made as to the best time of top dressing mowing grounds? Our answer is that any time will do before the ground freezes—though we prefer October to November. The rains in October will be of use to make the dressing act earlier than it would otherwise do.

Still there are different opinions among good farmers as to the very best time of application. It is now the opinion of many, founded on trial, that it makes but little difference whether the top dressing is applied immediately after haying or in October.

Farmers are beginning to think more on the subject rather than to conform to the *opinions* of writers who have not had much practice in the field. Farmers from different quarters are saying that manures may be buried too deep for the benefit of the soil. They are saying that they get better crops of corn when they put their manures very near the surface than when they bury the same *beneath* the furrow. Farmers try all modes, and adhere to the best.

Now, if top dressings on grass lands are practiced without loss of ammonia, why may not top-dressings be used in corn fields where the harrow soon mixes the manure with the upper soil?

It is a question with many farmers whether they shall apply their manures principally to grass lands as a top dressing, or to use them for tilled lands. As the price of hay now is, more money may be made on hay than on corn and pork—or than on butter and milk. Yet much depends on the quality of the land. Some farms have but little dry and warm land, but consist of low interval, well adapted to grass. Such farms are so well adapted to grass that they give more profit than they could do in tilled crops.—*Mass. Ploughman.*

Preparing Poultry for Market.

Messrs. B. & S. Beatty, of Cayuga county, New York, are large poultry breeders and furnish the following general instructions for preparing poultry for market:

"Never kill a bird unless it is fat. Never cut off the head of a turkey or goose, but hang them by the heels where they cannot bruise themselves in the death struggle, and stick them with a small knife and bleed them to death. Ducks and common fowls, if decapitated, should be held or tied and hung up to bleed to death. Never kill your birds with full crops—you will lose in price more than you gain in weight. Never strangle them, so as to leave the blood in. The best plan is to tie all kinds of birds to a line drawn from post to post, or tree to tree, and stick them just in the forward end of the neck.

You may pick all sorts of birds dry, if you don't tear the skin, but you must scald them afterward by dipping them suddenly in and out of boiling water. Don't scald the legs too much, whether you pick first or afterwards. Be careful of that. You must pick them clean, and the after-scalding makes them look plump and good.

Never draw a bird. It is worth while to pay freight on intestines, because meat cannot be kept sweet long after they are drawn and the air admitted inside of the body.

It is a practice of some of the best poultrymen, after the birds are plucked, to plunge them suddenly into boiling water, and then immediately into cold water. This gives them a clean, plump appearance, and makes them look fat if they are in decently good condition when killed. Nothing, however, can make a poor bird look well, while ill dressing will make the best look poor.

Lay the birds upon clean boards, in a cold room, till perfectly cool but not frozen; as at all times, but especially when there is a probability of damp, close weather, great care must be taken that the animal heat is out of them; and then pack in boxes with clean rye and oat straw so that they must not touch each other, about three or four hundred pounds in a box, filled full; mark the contents on a paper inside, and on the lid outside, and direct it to your commission merchant plainly, and send it by the express, and the invoice by mail.

Never kill your birds on a damp day, nor pack them, if you can avoid it, except in a clear, dry, cold atmosphere; and try to avoid night work when you are tired and your help sleepy, and all of you careless.

No matter how light your boxes are, they must look clean, or your poultry will not sell at first prices. In packing, press the wings close, and press the bird down hard on the breast, the legs extending back; and fill each course full and then lay on straw and another course of birds. Nail tight, but don't let a nail project inward to tear the bird.

Give your name and residence in full on the bill in the box and on the invoice by mail.

Never pack in barrels if you can get good dry goods boxes, as the rolling of barrels injures the poultry. Well packed boxes of well prepared birds will keep sweet for a long time in cool weather, and may be transported by express or by rail, and arriving in good order can be sold readily at the highest prices."

We trust that these remarks may enable our friends to secure a good market for their poultry, and cultivate a branch of trade to material profit and advantage.

The late M. Soyer states the best way of killing poultry is to take the bird by the neck, placing the thumb of the right hand just at the back of the head, closing the head in your hand, your left hand holding the bird, then press your thumb down hard and pull the head and neck contrariwise; the neck will break instantaneously, and the bird will be quite dead in a few seconds; then hang it for a short time by the legs for the blood to flow into the head, which renders the flesh much whiter. "In France (he adds) we usually kill them by cutting the throat close to the head. Both methods are good with regard to the whiteness of the flesh; but I prefer the English method, not being so barbarous."

Storing Celery.

In accordance with your request, I have furnished an account of my method of putting away celery for winter use; it differs somewhat from the practice of celery growers in general. I have followed this method now fifteen years, with complete success. I select a piece of rolling ground, choosing a fine, clear day for the work. I set the line so as to mark out a straight ridge, and after shaking off the soil from the roots, lay the plants down along the line, three or four in a breadth, commencing at the highest point of the row, and working towards the lowest point. Over the first layer of plants a second layer is laid, covering the first to about one-third of their length, until the entire drill is finished, which generally takes up about 250 or 300 stalks. The line is then removed and set about eight inches from the row of celery, and the ground marked off along the line with a spade. The same course is pursued on each side of the row of plants.—

The edge of this cut is leveled or sloped off with a clean cut, a spade deep from each side, and thrown over the plants, and so continue until the drill is formed into a ridge of a triangular form, the surface of which is well smoothed off and consolidated with the back of the spade. When severe frosty weather sets in I put on a heavy layer of stable litter, about six inches deep, and if the frost is very severe, a still deeper covering. The celery can be taken out safely during the most severe weather.

My crop usually occupies about four or six such drills or ridges as are described above.—Care is taken to make the ridges uniform in length and without any inequalities, so as to provide against the lodgement of any surface water. The rolling nature of the ground selected, provides against the accumulation of water even during the most copious rains or thawing weather. J. J.

Remarks.—The above was printed originally in the *Telegraph* about one year ago, and its reappearance at this time—just in season to be useful—is at the request of a friend, at a distance, who tried it last year, and was much pleased with the result.—*Ed. Ger. Telegraph.*

Great Value of and Demand for Morgan Horses.

I think it has been proved that the breeding of Morgan horses has enhanced the prosperity of the farmers of Vermont, and added a vast amount to the wealth of that State. And that the New Hampshire farmers have also been benefited in proportion to the extent and correctness of their breeding the Morgan stock, is as susceptible of proof. Sales in this vicinity have been effected within the past year, of Morgan colts, at four months old, ranging from one hundred twenty-five to two hundred dollars each. And there is no good reason why this State should not become as famous for her Morgan horses as ever Vermont was. But some may contend that the prices obtained are far above their intrinsic value. This is a point that should be examined thoroughly. The real value of the horse depends upon his ability to perform that kind of service that adds to the real wealth of the community. For instance, Bay Middleton, the most brilliant racer of any age, though he won large sums of money for his owner, never added one dollar to the wealth of England, but rather impoverished the community in which he performed his wonderful exploits—and his progeny was of no account, except for gambling purposes. Now the Morgan horse is adding to the wealth of the State continually, by his labor upon the farm, in the stage team, and in fact, in every department where a great amount of labor is required in a given time. They are ready for service at an earlier age, less liable to bone disease and other imperfections, and continue fit for labor to a greater age than any other breed of horses in the country.

That the Morgan horse has powers of endurance that entitles him to rank high, there can be little doubt. The performance of the Morgan mare, Fanny Jenks, trotting one hundred miles in nine hours, twenty-four minutes, thirty seconds, and immediately trotting her one hundred and first mile in four minutes and twenty-three seconds, and the next day going twelve miles, exhibiting no sign of stiffness, compares favorably with the wonderful feat of the pure Arabian horse Masson, imported by A. Keene Richard Esq., of Kentucky.

Though the Morgan's form and gait is not the best, perhaps, for the quickest time for a single mile, yet his natural capacity as a roadster, and his indomitable pluck, makes him a certain winner in the long race.

The demand for well-bred Morgans is increasing yearly, they being properly appreciated in all sections of the United States, and also in England and France—some of the best specimens being owned by English noblemen, and the French Emperor; and there is no reason to fear that the market will be overstocked for many years to come.

Morgan mares of good pedigree command very high prices at this time, to be retained in New England for breeding purposes; and any gentleman who has such a mare to dispose of, will find a customer at once by advertising her in the columns of the Journal.—*Journal of Agriculture.*

THE BEAUTIFUL IN A TREE.—Downing says:—"It seems to us indisputable that no one who has perception of the beautiful in nature, could ever doubt for a moment that a fine single elm or oak, such as we may find in the valley of the Connecticut or the Genesee, which has never been touched by the knife, is the most perfect standard of sylvan grace, symmetry and finely balanced proportions, that it is possible to conceive. One would no more wish to touch it with saw or axe (unless to remove some branch that has fallen into decay) than to give a nicer curve to the rainbow, or add freshness to the dewdrop. If any of our readers will give themselves up to the study of such trees as these—trees that have the most completely developed forms that nature stamps upon the species, they are certain to arrive at the same conclusions."

Care of Farm Stock in Early Winter.

The profits of farm stock depend very much upon their care and treatment during winter.—No animal, after the pastures fail to supply sufficient food in the fall, should be suffered to lose flesh, or go behind. All such waste is an absolute loss to the farmer. Not only is it a loss of the actual waste of flesh the animal sustains, but it is much more, it is a loss, in addition, of all the food it consumes to sustain life until the period arrives when it begins to take on flesh again in summer. It is equally important that stock should be kept constantly thriving in cold weather, as it is that it should gain in summer. A certain amount of food is required to sustain life and to keep the animal system in a state of equilibrium; with less than this there results absolute loss, and it is only the amount consumed beyond this from which any profit can be derived. Now, if it requires one ton of hay, or its equivalent, at a cost, say, of six dollars, to carry a bullock through the winter in as good condition as it was when taken from the pastures in the fall, we will say that there is neither gain nor loss. But add three dollars in hay or grain to the six already expended and there is the increased weight and the improved condition of the animal as an offset.

We often see young animals that have gained ten, twenty, or fifty per cent. during summer so neglected in winter as to lose one-half or more of this gain, which will require a considerable portion of the following summer's pasturage to restore. Now, we do not, by these remarks, advocate extravagant or costly feeding, but we wish to impress upon the minds of our readers that a horse, cow or hog is possessed of a mysterious, delicate, sensible organism, as much so as that which pervades our own bodies, and that humanity, as well as self-interest, require that they should be properly sheltered as well as abundantly fed during winter, or through that portion of the year when the pastures no longer afford proper protection and food.

Much is lost to farmers by not making proper provision for their stock in the fall, or early part of winter, to meet the changes of weather and the falling off in the natural supply of food from the pastures. A back-set, a sudden check of thrift or growth at this season is felt, and followed with increasing loss through all the succeeding months of winter and spring, and until a full rate is obtained from the fields and pastures of the approaching summer.

Now it need cost but little to furnish the hogs, the sheep, and the store cattle with some coarse fodder to which they could resort in times of cold, stormy weather, and there are few farmers that do not afford sufficient food, if properly husbanded and properly fed out, to sustain all the stock upon it. It is the indifference that many farmers feel to the comfort of their stock that prevents them from erecting cheap sheds, and properly disposing of the coarse food raised upon their farms. And this indifference so generally prevailing among our Western farmers, from long established habit, results from the privations and necessities incident to frontier life; and as the condition and circumstances of the farmers improve, they fail to make corresponding improvements for their animals.

With all the advantages arising from improved breeds of stock, not a little of their superiority is owing to the extra care the farmer bestows upon his favorite animals, for which they have paid extraordinary prices. Extend the same care to our common breeds of farm animals, in the form of shelter and extra feed, and see the benefits that will result from it. A neglected calf, colt or pig is so often stunted through neglect of proper food and shelter during the first winter of its existence, that it never after fully recovers from it.

Stock growing is an essential part of farm husbandry. No system of farming can be complete without it. It is as important to raise stock to consume the refuse and coarse productions of the farm and convert them into manure, as it is to grow corn or wheat; for without the former the latter cannot be grown without a constant waste of the natural fertilizing elements of the soil, which is the farmer's capital—his stock in bank. And while farm animals are required to render the system of farming complete, it is equally important that these animals be so cared for that they may return their proportion of profit for the capital invested. And all this may be done, and more too, if farmers will consider what is due to their animals. The neglect we so commonly meet with arises from a want of reflection and a proper appreciation of the absolute demands of nature.—*Valley Farmer.*

Barley for Sheep.—A correspondent of the London *Mark Lane Express* thinks that his experience warrants him in asserting that barley fed to sheep is a preventive of the rot—a disease which, owing to the wet weather last fall, has been very fatal in England the past winter.

Why are well fed chickens like successful farmers? Because they are blessed with full crops.

Cultivation of Peppermint.

This mint differs from what is generally called spear mint. The peppermint has a larger stalk, and a larger leaf than the spear mint. In rich ground it will grow from two to two and a half feet high.

The principal expense in its cultivation is in procuring the roots for the first year's crop; and the chief labor is in the first year's cultivation. The ground should be rich, and should be carefully ploughed in the fall or spring, so as to be entirely free from grass and weeds.

It is cultivated from the roots, which should be planted in the spring, in drills from eighteen inches to two feet apart, and should be cultivated carefully with the hoe until after midsummer, at which time it sends forth runners or shoots, like the strawberry, and covers the entire space planted, sending forth innumerable branches and stocks. It is cut in the fall when matured, and distilled into oil. The roots remaining in the ground during winter vegetate in the spring, and covering the entire space planted, require no cultivation the second year, and so also of the third year. By the end of the third year, the ground becomes so exhausted, and so infested with grass and weeds, that it is necessary to plough up the roots and plant fresh grounds. So the first year is the only one of expense or labor in the cultivation, as it requires no cultivation the second and third years. The crop is exhausting to the land. Lands have rented from eight to ten dollars per acre for the purpose of raising this mint upon them.

If the seasons are favorable and the lands rich the crop the first year will yield mint that will produce from ten to thirty pounds of oil to the acre. The second year, which is the most productive, from twenty-five to forty pounds, and the third year from ten to thirty pounds.

The process of distilling the mint into oil is simple: The mint when mowed, on maturing, is placed in an ordinary still boiler with water, and fire is placed beneath. The evaporation is condensed in a retort, and the oil being of less specific gravity than the water floats on the surface. The water in the retort is permitted to escape by a tube beneath the surface of the water in the retort on which the oil floats. The mint, after being distilled, is taken from the boiler with a hook, and the boiler filled with fresh mint and water, until the whole crop is tilled into oil.

The process of purifying it from all extraneous matter, is to filtrate the oil through clear white paper. It is then placed in tin canisters containing about twenty-five pounds, and tightly corked and sealed, and is then prepared for market.—*Cultivator.*

Fall Management of Grape Vines.

The month of November, after the leaves have fallen off, is the best time to prune vines. There is no difference of opinion at all on this point with *experienced* grape growers, and it must be done in the fall to succeed well in grape culture.

The principle should be fully understood, the fruit of next year is to grow from canes of *this season's growth*. Not one person in four who has grape vines on his premises seems to understand this important fact. They have read about it in the agricultural papers, but they paid little attention to it, and seldom or never acted upon it in pruning their vines.

Select the best canes of this year for the next fruiting season, and cut out all the old wood, provided you have new wood enough that grows out near the base of the vine. If the new wood consists of *laterals*, (that is, the side canes or shoots of old wood,) you should simply leave enough of these laterals to bear a fair crop next year, and cut back all the rest to *one eye*. The true system is to cut back every other shoot, so that the new wood of *next* year may be produced from the eyes left upon the canes thus cut back. This is the *renewal* system, which is practiced as well upon the side spurs and canes as on those that grow from the base of the vine.

It matters not how you train your vines, whether to trellises, stakes or otherwise, this renewal system must be adopted in pruning, because no cane, shoot or spur *ever bears fruit but one season.*

The month of November is also the time to gather cuttings to set in the following spring. Let them be of well matured wood of this year's growth (but older wood will grow,) and cut them from twelve to eighteen inches long, with from two to four eyes, according to the length of the joints; and if you have but a few, they may be kept safely in the cellar, packed in a box in layers with sand or garden mold spread among them compactly, so as to exclude air.—The sand or the mold should contain just enough moisture to prevent the cuttings from drying. Sand is recommended by horticulturists, but I find that the soil of my garden does just as well as sand; and I simply lay my cuttings upon the surface of the soil in layers, and cover them with earth (having too many to put into my cellar,) and they are preserved in excellent condition.—*Genesee Farmer.*

Effect of Depth of Soil on Vegetation.

The deeper a soil is, or can be made by good tillage, provided it contains the elements of fertility, the more productive it must become; not only by causing a large supply of actual food, but also by presenting an increased surface for the action of chemical forces to retain those valuable substances, which being in solution, would otherwise pass away in the subsoil, while though they might be retained, the roots could not get at them. The atmosphere penetrates more freely, warming and exciting the whole mass; the roots, instead of throwing out laterally and creeping along just beneath the surface, as in shallow soils, push boldly out in all directions in search of food, and thus strengthen the plant. The alluvial tracts so frequently found along our principal rivers, are all deep and very fertile; though generally dry, they seldom suffer from drought, owing to their powers of absorption, got from the air and subsoil.

Depth being so important, we should do all in our power to increase it by artificial means when required; as frequent ploughing at a uniform depth produces even in the deepest soils a hard bed, through which neither roots, air, nor moisture can readily penetrate; the use of the subsoil plough, once in three or four years, is strongly recommended. When the subsoil consists in stiff yellow clay, care must be taken not to bring up too much at once; for else, being sometimes of a poisonous nature, it might tend to injure the land for some length of time, until in fact, the oxygen of the air had affected the necessary chemical changes and sweetened the mass. Deep soils are much less injured by sudden changes of weather than shallow ones, for being open and friable, the rain-fall passes slowly through them, and after nourishing vegetation, by the moisture and ammonia that it leaves, disappears in the subsoil; and during a dry time they maintain their moisture, owing to their powers of absorption and capillary attraction. Many of the most fertile loams resting upon a gravelly and very porous subsoil, owe their fertility to their depth.

The same rule holds good with soils resting on limestone; they are rich or poor, according to depth. Therefore it is evident in farming, besides the mere routine of preparing the ground for the crop, we have the important business of deepening the ground to attend to. Draining, in all cases where the land requires it, will be found a most important assistant, lowering the water level to the bottom of the drains some three or four feet from the surface, enabling the atmosphere—that great fertilizer—to penetrate into the crevices, formerly filled with excess of moisture, and by diminishing the tenacity, lessening the difficulties of deep cultivation.—*John Coleman's Prize Essay, (Eng.)*

Fruit vs. Malaria.

Residents in the Western States, and other regions where intermittents and similar diseases result from malaria, state that a regular supply of ripe, home-grown fruit, is almost a sure preventive. Eat the fruit only when fully ripe, and eat only moderate quantities at a time, and little need be feared. The residents of such regions should, therefore, not omit the earliest opportunity for a supply. Plant large quantities of strawberries for early summer—they will bear abundantly a year from the time they become established. Plant many currant bushes—for these are a most healthy and excellent fruit—very hardy—and if in abundance, will last through all the hottest parts of the summer.—The Doolittle and Orange raspberries are profuse bearers—the former very hardy, the latter generally so, but should be laid down and covered with an inch or two of earth for winter. The Rochelle blackberry, if pinched in when three or four feet high, (about midsummer,) will bear abundantly, and prove hardier than if the canes run up without control. The Delaware, Clinton and Concord grapes are early and hardy, and will bear in two or three years from transplanting. Dwarf apples, on the Paradise and Doucin stock, will flourish in any locality, and begin to bear profusely in three or four years, and on the Paradise stock often in two years. Some varieties bear early on common stock; such, for example, as the Dyer, Lowell, Early Strawberry, Sops of Wine, Oldenburgh, Porter, Belmont, Jonathan, &c., but these will, of course, bear much sooner as dwarfs. The Bartlett, Washington, Julienne, Flemish Beauty, Beurre d'Amalis, Onondaga, Howell and Seckel pears, produce early as standards, and the Louise Bonne of Jersey as a dwarf. Houghton's gooseberry grows with great vigor, is very hardy, and in two or three years affords almost solid masses of berries on the branches.

Such fruits as the above should be planted out on every new place, as indispensible to health as well as to comfort and economy; and emigrants to new countries should take a supply with them, as the best medicine chest they can provide.—*Ex.*

Of all kinds of property, money lent on good security is the most *interesting*.

Care of Cattle in Switzerland.

If there is one thing in which the Argovian takes particular pride, and in which he particularly excels, it is in the care of his cattle. They are elephants in size, and glossy hides betoken some peculiar art on the part of their masters. Not a particle of dust or straw is allowed to cling to them, and they are combed and washed as only horses are elsewhere, not with a *curry-comb*, but with old cards, which being finer and softer, are more agreeable to the animal, and improves the fineness of the hair. This receives an additional lustre by being rubbed with old flannel. They actually shine; and the gentle creatures have an evident consciousness of their beauty, for they are careful not to soil their ashy grey and chestnut robes by lying in the mud when allowed to take a walk.

Animals can acquire, if they have not by nature, a fine sensibility of cleanliness, and learn to take care of themselves. Not only do they exercise this care for the person of the animal, but are at the pains of removing every feather and unpalatable substance from their food; and the water troughs where they drink are kept as clean as if human beings resorted to them. If anybody doubts the efficacy of these means, let him come and see not only how large, but how intelligent these animals look; how they watch every motion of those who talk to them, and listen to all they say. What an affectionate moan they will utter to welcome the milkers, who are always men, as they say "women tickle the cow, and never take all the milk from the udders, so that they give less and less." It is said of them that the Argovian will send for the doctor for his cow a great deal quicker than for his wife; but we did not see any evidence that he was not sufficiently attentive to both.—*Miss Johnson's Cottages of the Alps.*

CURE FOR DOG DISTEMPER.—Some one inquired in some of the back numbers of your journal for a cure for this disease. I had a dog that had been sick for some three weeks. A neighbor said that it was the distemper, and advised me to give a teaspoonful of ground sunflower seed for three successive days. As I could not be at home, I gave him the three doses the same day. To my surprise, the next day, for the first time since he had been taken sick, he was out after rabbits with that animation and zest that a rat terrier alone can display. It was a perfect cure. —*Cor. Valley Farmer.*

Live for something—be not idle.

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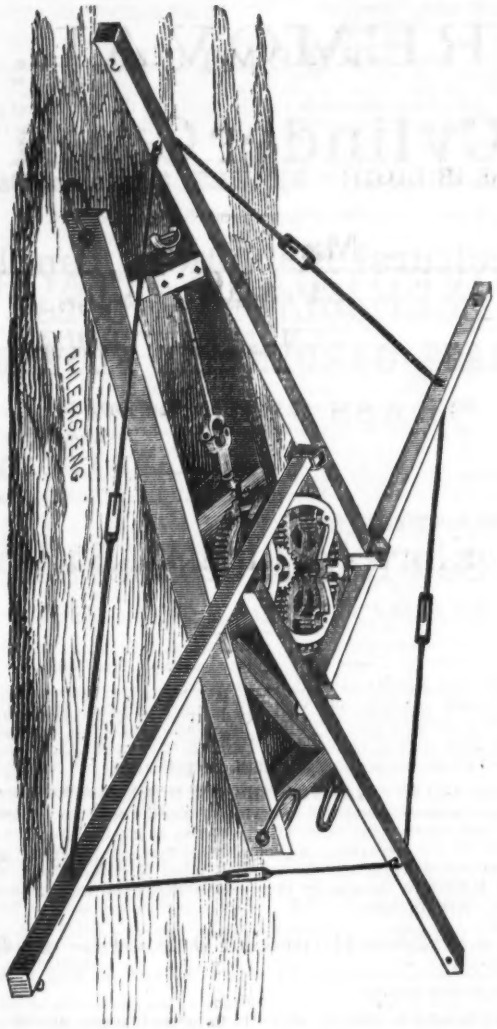

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KEEPS AN

Agricultural Implement and Seed Store

On Pratt Street, No. 141, in Baltimore City.

He keeps pretty nearly everything in that line. Any kind of a

PLOUGH, HARROW,

Cultivator, Corn Sheller,

WHEAT FAN, RAKE, HOE, &c.

That you may want, you can get them of him. He keeps the best GRUBBING HOES in the whole country; they sell at *a good price*, but are worth the money. He sells a *very superior* AXE, too—he seems to have an aversion to selling indifferent Implements. He sells about the best

Thresher and Cleaner

In the whole country; sold quite a large number this year, and expects to make a *young fortune* on that *one* Machine; he can give you a list of names nearly as long as your arm, of first rate farmers, that bought this year, and all *perfectly delighted*. He sells *first rate* plain THRESHERS, too, and the *very best*

HORSE POWERS.

ANYTHING you want in the Implement and Machine line, you can certainly get from NORRIS, if it is to be had at all, and at the right prices—so you need not be wondering if he *keeps this, that* or the *other* thing. Just send your order—it matters not whose make the article may be—if it can be had in Baltimore, and *he* is satisfied that *you are* "all sound on the *pay* question," you'll get the Machine, from an Apple Peeler up to that *great, grand* WESTINGHOUSE THRESHER AND CLEANER. He is going to have something "mighty nice" next year in the way of a

REAPER AND SELF-RAKER.

Look out for *that* Machine before you buy. Now remember you can get anything you want, either of Implements, Machines or Seeds, (*provided* you pay or satisfy him you will pay,) from

THOMAS NORRIS,

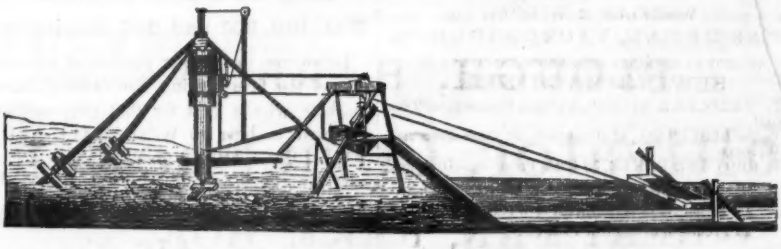
141 PRATT STREET, BALTIMORE, MD.

N. B.—NORRIS is Agent for

HERRING'S PATENT FIRE AND BURGLAR PROOF SAFE,

Which is conceded to be the best and most reliable Safe in the world. oct-tf

BRYAN'S AGRICULTURAL MARL AND MUD LIFTER,



A STRONG AND DURABLE MACHINE, WHICH CAN BE WORKED BY ORDINARY FARM HANDS.

THE PURPOSE OF THIS MACHINE IS

To Raise the Deposit from the bottom of Ravines, Coves, Creeks, Rivers, or other places inaccessible to Teams.

The machine works with facility 170 feet from the Capstan, and, if well attended, will remove a large cart load every five minutes on an average. For raising marl, a different bucket is made, having a strong steel lip and a steel coulter on each side of the bale, cutting its way free both going out and returning, and will lift any marl clear of rock, or into which a spade or shovel can be forced.

The Bucket is made of the best Boiler Iron, and is so constructed that it deposits its load into the hopper, through which it passes into the cart—the labor of shoveling not being required—and by a reversed motion of the Capstan is carried out for another load.

With the Drum—thirty-two inches in diameter and twelve feet lever—two horses are required to work it in mud. The Drum can be reduced in diameter to suit the consistency of the marl—but one man and a boy are required to operate it. By referring to a drawing, with clear explanation, sent with each machine, any ordinary carpenter can put one up without difficulty.

But a few pieces of roughly hewn timber are required for the frame. Every thing else complete, with chain and rope enough to send the bucket 170 feet from the capstan, is furnished in Baltimore for the sum of $225, cash.

All orders promptly attended to or information given at LARRABEE'S FOUNDRY *corner of Front and Plowman streets, Baltimore, Md.*

BRYAN & BROTHER.

october

WHEELER & WILSON'S

SEWING MACHINES,

With new improvements, at reduced prices. The Wheeler & Wilson Manufacturing Company, having gained ALL their suits at law with infringing manufacturers of Sewing Machines, propose that the public shall be benefitted thereby, and have accordingly reduced the prices of their Sewing Machines. After this date they will be sold at rates that will pay a fair profit on the cost of manufacture, capital invested, and expense of making sales—such prices as will enable them to make first-class Machines, and, as heretofore, guarantee them in every particular.

NEEDLES, SILK, &c., at reduced prices.

FAIRS OF 1860.

WHEELER & WILSON,

☞ AS USUAL, VICTORIOUS! ☜

AWARDS BY VIRGINIA MECHANICS' INSTITUTE ON

SEWING MACHINES.

To WHEELER & WILSON, 1st Class Premium—Silver Medal.

To the LESTER CO., of Richmond, 2d Class Premium—Diploma

To GROVER & BAKER, 3d Class Premium—Diploma.

ON SEWING MACHINE WORK

1st Premium to WHEELER & WILSON,

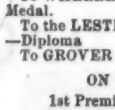
2d Premium to the LESTER CO.

W. MERRELL, AGENT,

jan-1 205 Baltimore street, Baltimore, Md.

PIANOS AND MELODEONS.

NUNNS & CLARK'S, AND STEINWAY & SONS' GOLD MEDAL PIANO FORTES.



The undersigned is constantly receiving new supplies of PIANOS from these celebrated Factories, which are considered by competent judges to be in point of tone, touch, workmanship, durability, keeping in tune and *not breaking strings*, superior to any made in the United States. He is constantly receiving the most unbounded expressions of satisfaction and delight from those who have purchased these Instruments—in fact every Piano sent out from these warerooms has been the means of effecting other sales. F. D. BENTEEN,

No. 10 N. Charles-st., and 80 W. Fayette-st.

☞ SECOND-HAND PIANOS FOR SALE. Pianos exchanged. MELODEONS from $45 to $200.

ORGAN HARMONIUMS, for large Churches, with 8 stops and two rows of keys, $350.

Particular attention is paid to orders by mail. nov

Fruit and Ornamental Trees.

J. L. DARLINGTON & CO.,

Morris Nurseries, West Chester, Pennsylvania,

Call the attention of their friends and customers in the South to their large and fine assortment of *Fruit Trees*, both Standard and Dwarf, also to their very full collection of all the small Fruits. We have all the best Fruits adapted to successful cultivation, comprising the best varieties of Apples, Pears, Peaches, Cherries, Plums, Apricots, Nectarines, Quinces, etc., etc.

☞ Ornamental Trees, both Evergreen and Deciduous of all kinds and sizes can be furnished at reduced prices. We call especial attention to our extensive stock of large and well shaped Evergreens. For particulars we refer to our Catalogues, which will be furnished gratis to all applicants. Freight paid to Philadelphia on all orders amounting to $5 or over. mar-1y

HOWARD DANIELS,

Architect and Landscape Gardener,

237 BROADWAY, NEW YORK.

nov.

Splendid Stock

OF

DRY GOODS

HAMILTON EASTER & CO.

Invite the attention of persons visiting Baltimore to the large and splendid STOCK OF GOODS in their

NEW MARBLE BUILDING,

Nos. 199, 201 and 203 Baltimore St.

Importing the greater portion of our stock—one of the firm visiting the various European markets twice a year for that purpose—we are prepared to offer to WHOLESALE AND RETAIL PURCHASERS goods of the best class at very low prices, including

Black and Colored Silks

AND

ROBES,

Fine Dress Goods

OF EVERY FABRIC,

Low and Medium Priced Dress Goods,

SHAWLS,

SCARFS,

MANTILLAS

AND CLOAKS,

GLOVES,

HOSIERY,

CRAVATS,

HANDKERCHIEFS, &c.

CHOICE GOODS FOR MEN'S WEAR.

Mourning Goods,

OF EVERY DESCRIPTION.

IRISH LINENS, LINEN GOODS, and articles of every description in the way of

Housekeeping Dry Goods.

☞ ALWAYS ON HAND, such Goods as are required by

Planters and Farmers,

FOR SERVANTS' USE:

Such as Bleached and Brown COTTONS, OSNABURGS, JEANS, LINSEYS, PLAIDS, Fulled Cloths, SATINETS, BLANKETS, &c.

☞ NO DEVIATION FROM FIRST PRICE NAMED FOR ANY ARTICLE.

WHOLESALE ROOMS on second and third floors. apl-1y

HENRY GIBSON,

(Late BURNS, RUSSELL & GIBSON,)

MANUFACTURERS OF DRAIN TILE,

LOCUST POINT, BALTIMORE, Maryland.

All Letters and Orders must be addressed to the CARE of E. G. LIND, Architect, CORNER OF CHARLES AND FAYETTE STREETS, when they will secure prompt attention.

2 inch Round Tile.....	$11 per 1000 feet.	4 inch Round Tile.....	$30 per 1000 feet.
3 " "	17 " "	4 " " 1-6 long.....	34 " "

COLLARS EXTRA.

4 inch Round Tile, 2 feet long, with Collar, 9 cts. per foot—5½ inch Round Tile, 2 feet long, with Collar, 13c per foot.

Particulars respecting large Socket Pipes and Sole Tiles will be forwarded on application as above.

All these Pipes are made of the finest clay by skilful and experienced workmen; they are clean in the bore, and so thoroughly burnt as to be impervious to frost, and will bear comparison in quality and strength to the best goods manufactured in the world; a premium for which was awarded me at the Norfolk Show. dec-1y

SAUL'S NURSERY,

Washington City, D. C.

The proprietor offers for the fall trade, an extensive stock of FRUIT, ORNAMENTAL TREES, SHRUBS, ROSES, BULBOUS ROOTS, &c., unsurpassed in quality and at prices to suit the times, embracing—

STANDARD AND DWARF PEARS—an immense stock of very fine trees.

PEACHES—all the leading sorts—beautiful trees—warranted free from yellows, &c.—cheap by the 1000.

APPLES—standard and dwarf; Apricots; Almonds; Cherries; Plums; Figs, &c.

GRAPES—Delaware; Taylor; Union Village; Diana; Concord; To Kalm; Hartford Prolific; Lenoirs, &c.—with every variety of merit at low rates.

STRAWBERRIES—Triomphe de Gand; Vicomtesse Hericurt de Thury; Seedling Eliza; Victoria; Excellente; Jucunda; Downer's; Hooker; Feast's Fillmore; Wilson's Albany; Wonderful; Wizard of the North, &c., by the dozen, 100 or 1000.

CURRANTS—Victoria; Red and White Grape; Red and White Dutch; La Versaillaise; Knights Early Red; Champagne, &c.

GOOSEBERRIES—Large English varieties; Blackberries, Lawton, Dorchesters; Raspberries, &c.

Rhubarb; Asparagus Roots; Chinese Yams, &c.

Fruit Tree Stocks; Pear; Quince; Mazzard; Apple; Manettii, &c.

Evergreen; Ornamental Trees; Flowering Shrubs; Climbers, &c.

Fortune's exquisite double flowering Peaches, Crimson, White, Rose Carnation and Camellia flowered—these are among the most beautiful of spring flowering trees.

ROSES—a very extensive and complete collection, embracing all the standard sorts, with all novelties.

Phloxes; Dahlias; Delphineums; Pæonias, &c.

BULBOUS ROOTS—direct from Holland—Double and Single Hyacinths, Tulips, Ranunculus, Anemonies, Lilies, &c.

From the facilities now offered of sending articles by mail, Grape Vines, Strawberries, and all small things, can in that way be forwarded any distance with perfect safety.

All articles sold as low as any reliable nurseryman.

Catalogues mailed on application.

sept JOHN SAUL, Washington City, D. C.

JAMES BAYNES. JOHN B. BAYNES.

JAMES BAYNES & SON,

WOOL DEALERS,

HOLLINGSWORTH STREET,

Near Lombard, between Calvert and Light sts.,

BALTIMORE.

REFERENCES:—B. Deford & Sons, Baltimore: Wethered Brothers, Baltimore; Benj. Bullock & Sons, Philadelphia; H. Robinson & Co., Philadelphia; J. W. Stitt & Co., Philadelphia; Wm. K. Strong, New York; C. J. & F W. Coggill, New York; G. W. Bond & Son, Boston; T. B Townsend & Son, Boston; Springer Harbaugh, Pittsburg Pa.; A. D. Bullock & Co., Cincinnati, Ohio. may

MORRIS' NURSERIES.

Our Wholesale Catalogue, with prices for fall of 1861, is now ready for distribution, and will be sent to all Parties applying and enclosing a one cent postage stamp.

The stock of Trees for the fall trade is large, fine and thrifty, and comprises every article kept in a first class establishment, and are offered at reduced prices.

We would invite particular attention to the following articles, selected from our list—the stock is large, and we think prices will compare favorably with any other reliable establishment.

Currants, $20 to $40 per 1000.
Gooseberries, $25 per 1000.
Rhubarb, $50 per 1000.
Lawton Blackberries, $15 per 1000.
Asparagus, giant, $2 per 1000, $15 per 10,000.
Apple Trees, 6 to 9 feet, selected, $100 per 1000.
" " 5 to 7 feet, good trees, $75 per 1000.
Peach Trees, 5 to 7 feet, $60 per 1000.
Spanish Chestnuts, 1 year, extra, $25 per 1000.
Sugar Maple, twice trspl, $12 to $35 per 1000.

A large assortment of Seedling Evergreens, 2 and 3 years old, from 6 to 12 inches, very low, &c., &c., &c.

Address J. L. DARLINGTON & CO.
sept-3t West Chester, Pa.

CHEMICALS, DRUGS, &c. used for Agricultural Purposes.

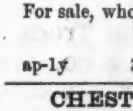
NITRATE OF SODA,
SULPHATE OF SODA & SALT-CAKE,
SULPHATE OF AMMONIA,
SAL-AMMONIAC,
POT-ASH, SODA-ASH,
CARBONATE OF AMMONIA,
OIL VITRIOL, &c., &c.

For sale, wholesale and retail, by

R. J. BAKER,

ap-1y 36 *South Charles-st., Baltimore.*

CHESTER COUNTY PIGS.



The undersigned is now receiving orders for his fall delivery of PURE CHESTER COUNTY PIGS, which will be ready for shipment about 1st of next month, in pairs not akin. References as to quality, to purchasers in all sections of the country.

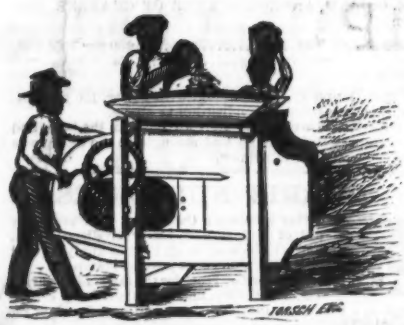
PASCHALL MORRIS,
Agricultural and Seed Warehouse,
sept-tf 1120 Market street, Philadelphia.

BRIGHT ON GRAPE CULTURE.

SECOND EDITION.—THIRTY PAGES OF NEW MATTER, with the experience of 1860 and '61, being the most important part of the work. Indispensable to all GRAPE GROWERS. Sent by mail, free of postage, on receipt of price, 50 cents, in stamps. Address,

WILLIAM BRIGHT,
july Box 138 Philadelphia P. O., Pa.

5 SILVER MEDALS,
3 DIPLOMAS,
70 1st Premiums!



J. MONTGOMERY & BRO.,

155 NORTH HIGH STREET,

BALTIMORE, MD.,

Inventors and Manufacturers of their

DOUBLE SCREENED

ROCKAWAY GRAIN FAN,

Celebrated for their efficiency, durability and ease in working.

The undersigned, during the past year, as well as in those which have preceded it, had the fullest evidence of the superiority of their ROCKAWAY GRAIN FAN.

Wherever a test has been permitted, at any of the Cattle Shows at which their Fan has been exhibited, it has uniformly been triumphant—and the people of the South need not go North for the purchase of a Machine with which to cleanse their grain, for our Fan is unequalled, we believe, by any other ever introduced.

☞The price of our Fans in Baltimore, is $34; and in Lynchburg, $36. Orders addressed to us at either place will receive prompt attention. A liberal discount to the trade.

The attention of RICE PLANTERS is called to our Fan, constructed for CLEANING RICE, which is the best for the purpose ever invented, and which costs $2 less than our Double Screened Rockaway Grain Fan.

mar

LADD, WEBSTER & CO'S

FAMILY AND MANUFACTURING

SEWING MACHINES,

No. 131 W. BALTIMORE STREET,

Between Calvert and South sts., Baltimore.

W. H. WALMSLEY, AGENT.

Let Manufacturers, Planters, Farmers, Housekeepers or any other persons in search of an instrument to execute *any kind of sewing now done by machinery, make sure they secure the best*, by examining ours before purchasing.

☞SAMPLES OF WORK SENT BY MAIL.☜

A FEW TESTIMONIALS IN FAVOR OF OUR MACHINES.

(*Extract from Letter.*)

LIBERTY TOWN, MD., July 2, 1859.

I am very much delighted with your Sewing Machine. It is just the right thing. Should I not be able to procure another, I would not take *ten times the cost* of it for it.

THOMAS CARR.

MOUNT PLEASANT, MD., Nov. 30, 1858.

MESSRS. LADD, WEBSTER & CO.—*Dear Sirs:* The Machine purchased from you in June last has been in constant use for tailoring purposes, and has stood every test to which it has been submitted, and gives entire satisfaction in every particular. The result of my experience is, that no sum, in reason, would induce me to part with it, if its place could not be filled with an exact counterpart I would most earnestly recommend all who want a really good Sewing Machine to examine yours before purchasing

JOHN W. OGBORN.

EASTVILLE, VA., May 10, 1859.

MESSRS. LADD, WEBSTER & CO.—*Gentlemen:* The Sewing Machine purchased for myself, and that for my friend arrived safely, and both are giving perfect satisfaction.

As regards the one being used in my own family, Mrs H. is so much pleased with it, that she says if she could not obtain another exactly like it, she would not take $1000 for it. Very truly, yours,

jan E. HOLLAND.

ROBINSON'S

MANIPULATED

GUANO!

ROBINSON'S MANIPULATED GUANO has been extensively used during the past year, and we have received letters from many Farmers and Planters, who speak in the highest terms in regard to its

VALUE AS A FERTILIZER.

We are fully prepared to supply all orders, and guarantee that the article we offer is not surpassed in quality by any fertilizer now in the market. Our Guano is composed of the

Best Peruvian Guano,

The Richest Phosphatic Guano,

And Finely Powdered Bone,

And we warrant every lot we sell to be

One-half Peruvian Guano,

We would be pleased to have Farmers visit our Works, that they may see and learn how the Guano is prepared.

☞Certificates and Pamphlets, giving all needed information, will be furnished at our Counting room, and by our Agents.

F. ROBINSON & CO.,

No. 4 Hollingsworth street,

feb BALTIMORE, MD.

SINCLAIR & CO'S

THRESHING MACHINE,

With Straw Carrier Attached.

SINCLAIR & CO'S
THRESHING
MACHINERY.
Workmanship, Materials, and principle of construction
WARRANTED
Inferior to none in the United States.

Width of Cylinder,	18	20	25	30 inch.
Price complete for Parallel Cylinder,	$55	60	73	85
Price complete for Spiral Cylinder,	60	65	78	90

Ditto without Straw Carrier, $15, 18 & 20 less.

DRIVING BELTS, $12a18, as per length. HORSE REVOLVING and GLEANING RAKES HARVEST TOOLS of every description.

For sale by

R. SINCLAIR, Jr. & CO.

No. 62 LIGHT STREET, BALTIMORE.

july